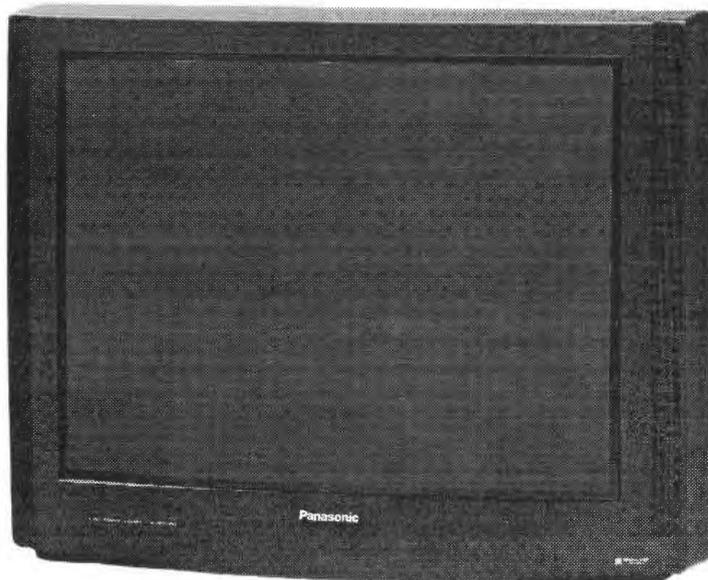


2049

ORDER NO. MTC9806771C1
B5

Service Manual

Color Television

**Main Manual
(DX1L)**


Cabinets are similar except for size

Panasonic

Models	Chassis
CT-36SF35W	AEDP322
CT-36XF35CW	AEDP322
CT-27SF35W	AMEDP323
CT-27XF35CW	AMEDP323
CT-27SF25W	AEDP323
CT-27XF25CW	AEDP323


SPATIALIZER
3-D STEREO

This Service Manual is issued as a service guide for the models of the DX1L family listed above. Included in this manual are a set of schematics, block diagrams, operations overview, functional descriptions, alignment procedures, disassembly procedures, and a complete parts list.

WARNING! This Service Manual is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. **Products powered by electricity should be serviced or repaired only by experienced professional technicians.** Any attempt to service or repair the product or products dealt with in this Service Manual by anyone else could result in serious injury or death.

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this manual.

Panasonic®

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Important Safety Notice

Special components are used in this television set which are important for safety. These parts are identified on the schematic diagram by the symbol  and printed in **BOLD TYPE** on the replacement parts list. It is essential that these critical parts are replaced with the manufacturer's specified replacement parts to prevent X-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An **Isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the Receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always Replace Protective Devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the Receiver. Use only manufacturer's recommended rating for fuses, circuit breakers, etc.

High potentials are present when this Receiver is operating. Operation of the Receiver without the rear cover introduces danger from electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **Handling the Picture Tube**. Rough handling may cause it to implode due to atmospheric pressure (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging, connect cold ground (i.e. dag ground lead) to the anode with a well insulated wire or use a grounding probe.

Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to X-ray radiation.

The **Test Picture Tube** used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provides shielding for the tube viewing area against X-ray radiation as well as implosion. The magnetic shield limits X-ray radiation around the bell of the picture tube in addition to restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling 45kV without causing X-ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that it is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

Unplug the AC cord and connect a jumper between the two plug prongs.

Measure the resistance between the jumpered AC plug and exposed metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed

metallic part has a return path to the chassis, the reading should be between 240k Ω and 5.2M Ω . If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (See Figure 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5k Ω 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such as a Simpson Model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 1/2 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the Receiver must be repaired and rechecked before it is returned to the customer.

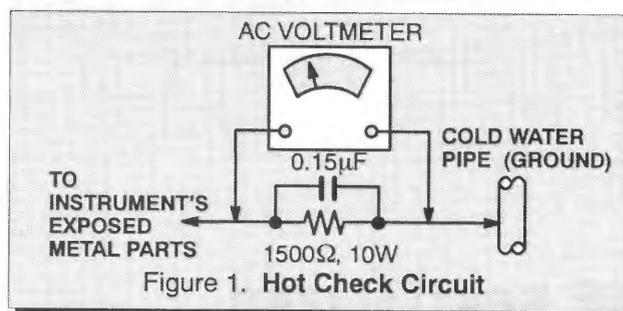


Figure 1. Hot Check Circuit

X-ray Radiation

WARNING: The potential source of X-ray radiation in TV sets is in the High Voltage section and the picture tube.

Note: It is important to use an accurate, calibrated high voltage meter.

Set the **brightness**, **picture** and **sharpness** controls to minimum. Set **automatic color** and **AIC** (where applicable) to OFF.

Measure the High Voltage. The high voltage meter should indicate **28.7kV (± 1.0 kV) for the 27" Receivers** and **31.0kV (± 1.0 kV) for the 36" Receivers**. If the upper limit is out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

Horizontal Oscillator Disable Circuit Test

This test must be performed as a final check before the Receiver is returned to the customer. See **Horizontal Oscillator Disable Circuit Procedure Check** in this manual.

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SPECIFICATIONS

OPERATION

SERVICE

CIRCUITS &
BLOCK DIAGRAMS

PARTS LIST

Service Notes

NOTE: These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

SPECIFICATIONS

Leadless Chip Components (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitors may also be limited for the same reason. It is recommended that identical chip components be used.

OPERATION

Chip resistors have a three digit numerical resistance code – 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6K Ω resistor, 0 = 0 Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

SERVICE

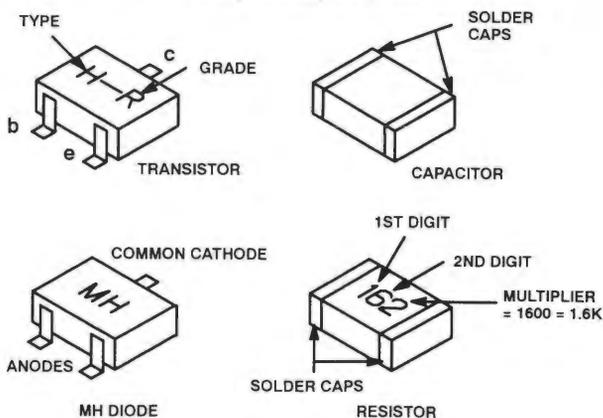
Component Removal

1. Use solder wick to remove solder from component end caps or terminals.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

Chip Components



BLOCK DIAGRAMS

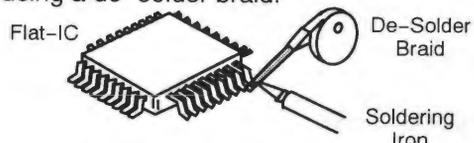
PARTS LIST

How to Replace Flat-IC

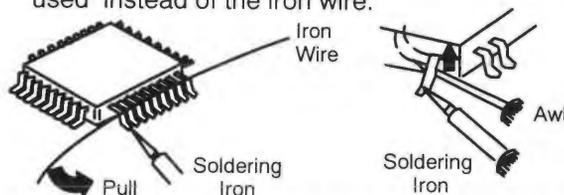
– Required Tools –

- Soldering iron
- De-solder braids
- Iron wire or small awl
- Magnifier

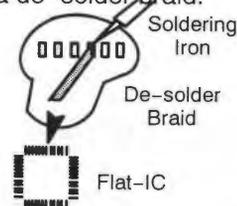
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.



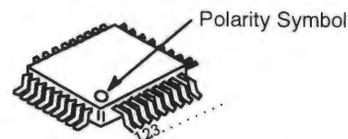
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.



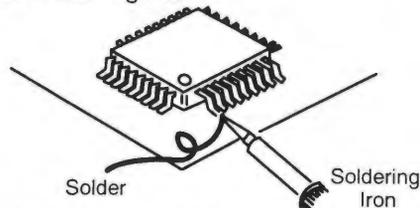
3. Remove the solder from all of the pads of the Flat-IC by using a de-solder braid.



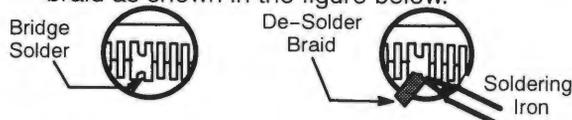
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.



5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



Service Notes (Continued)

IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the Receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground (⚡) or (⚡) when servicing, or incorrect voltages will be measured.

WARNING: This Receiver has been designed to meet or exceed applicable safety and X-ray radiation

protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to X-ray radiation and shock and fire hazard, parts indicated with the symbol ⚠ on the schematic must be replaced with identical parts. Order parts from the manufacturer's parts center using the part numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specifications.

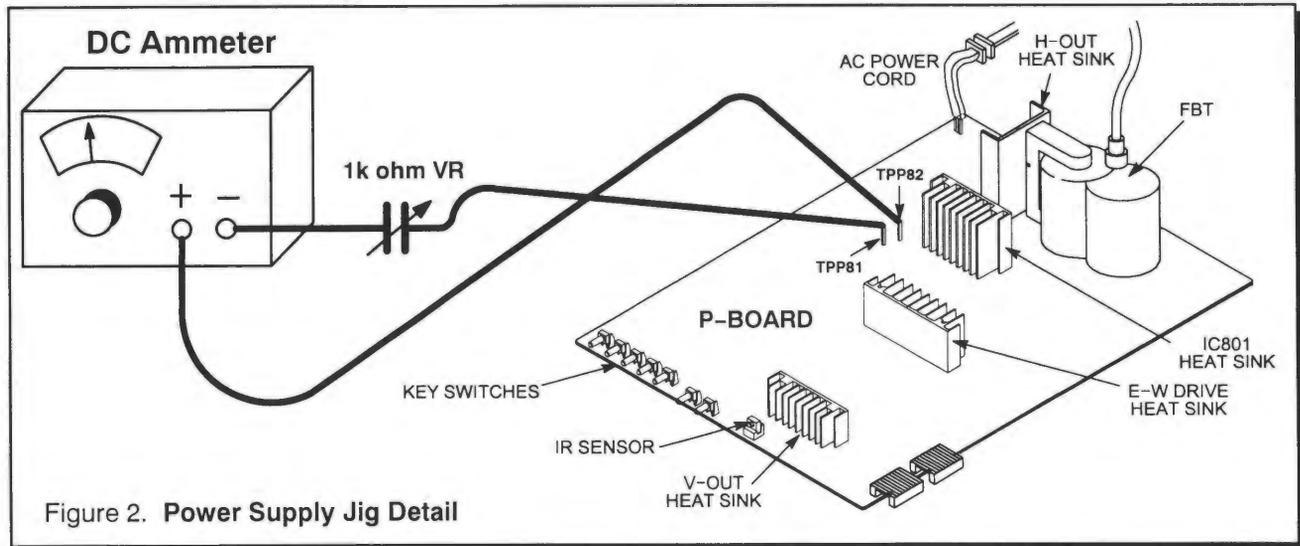


Figure 2. Power Supply Jig Detail

Horizontal Oscillator Disable Circuit

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillator that limits the high voltage.

The overvoltage protection circuit is not adjustable. However, if components indicated by the symbol ⚠ on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, the operation of the circuit should be checked using the following procedure.

Equipment needed to check the disabled circuit:

1. High Voltage Meter (0 – 50kV)
2. Variac or Isolation Transformer
3. 1k ohm VR
4. DC Ammeter
5. Frequency Counter

Preparation

1. Connect Receiver to AC 120 Volts. Do not turn ON.
2. Connect Frequency counter to pins 5 & 6 of FBT.
3. Connect HIGH VOLTAGE meter to 2nd anode (HV button). **Note:** use cold ground (⚡) for negative lead or DAG GND connector C10.
4. Prepare DC Ammeter/1k ohm VR jig to be connected between TPP81 and TPP82 as shown above.

Procedure

1. Turn power ON. Apply a monoscope pattern.
2. Set Picture and Brightness controls to a minimum.
3. Turn power OFF.
4. Connect DC Ammeter/1k ohm VR jig between TPP81 and TPP82 as shown above.
5. Turn on power. Turn on PIP, same channel. Observe and note current and frequency.
6. Using the variable resistor slowly increase the current (as shown on ammeter) until the horizontal sync frequency abruptly increases (as shown on frequency counter) indicating that the horizontal frequency is just beginning to pull out of sync. Confirm that PIP picture disappears before the Main Picture horizontal sync is disabled.
7. Observe the High Voltage meter. HIGH VOLTAGE should read **less than: 37.5kV for 27"** and **41.5kV for 36"**.
8. Turn power OFF. Remove DC Ammeter/1k ohm VR jig, frequency counter and HV meter.
9. Turn power ON. Reset Picture and Brightness controls. Confirm B+ **140V ±2.0V** with 120V AC applied.

IF HIGH VOLTAGE IS NOT WITHIN THE SPECIFIED LIMIT, THE CAUSE MUST BE DETERMINED BEFORE THE RECEIVER IS RETURNED TO THE OWNER.

Receiver Feature Table

SPECIFICATIONS

FEATURE\MODEL	CT-27SF25W & CT-27XF35CW	CT-27SF35W & CT-27XF35CW	CT-36SF35W & CT-36XF35CW
Chassis	DX1L	DX1L	DX1L
Tuning system	New 144K	New 144K	New 144K
# of channels	181	181	181
Menu language	ENG/SPAN/FR	ENG/SPAN/FR	ENG/SPAN/FR
Closed Caption	X	X	X
Picture in Picture (PIP)	1T	2T	2T
Antenna input	75Ω Input	2RF	2RF
Remote Model #	EUR511170	EUR511151	EUR511151
Picture tube	M68LNK161X	M68LNK161X	A90AHS50X
SuperFlat/Black	X	X	X
Comb filter	2DIG ADV.	3D Y/C	3D Y/C
H Edge Correction	X	W/VEC	W/VEC
YNR	N/A	New	New
VM	X	X	X
V/A norm (X=both)	X	X	X
Color Temp	X	X	X
Natural AI	N/A	X	X
MTS/SAP/DBX	X	X	X
Built-in audio power	10W/Ch (10%)	10W/Ch (10%)	10W/Ch (10%)
# of speakers	2	2	2
Speaker Type	Twin Drive	Twin Drive	Twin Drive
Bass/Balance/Treble Control	X	X	X
AI Sound (SMPL)	X	X	X
Spatializer	X	X	X
A/V in (rear/front)	2/0	3/1	3/1
A/V Program Out	N/A	X	X
Audio Output	FAO, VAO	FAO, VAO	FAO, VAO
S-VHS in (rear/front)	1/0	2/0	2/0
Dolby Center Channel In	N/A	X	X
Dimensions (HxWxD) mm in	572.0 x 715.0 x 502.0 22.52 x 28.15 x 19.76	572.0 x 715.0 x 502.0 22.52 x 28.15 x 19.76	744.0 x 927.0 x 624.0 29.29 x 36.50 x 24.57
Weight (kg/lb)	40.19 / 90.14	40.19 / 90.14	74.39 / 164.00
Power source (V / Hz)	120 / 60	120 / 60	120 / 60
Power consumption, Max (A)	2.2	2.2	2.4
Anode voltage	28.7kV ± 1.0kV	28.7kV ± 1.0kV	31.0kV ± 1.0kV
Video input jack	1V _{p-p} 75Ω phono jack	1V _{p-p} 75Ω phono jack	1V _{p-p} 75Ω phono jack
Audio input jack	500mV RMS 47kΩ	500mV RMS 47kΩ	500mV RMS 47kΩ

Receiver Feature Table

FEATURE\MODEL	CT-27SF25W & CT-27XF35CW	CT-27SF35W & CT-27XF35CW	CT-36SF35W & CT-36XF35CW
A-Board TNPH0199	AF	AE	AB
C-Board TNPA1128	AC	AC	AB
D-Board TNPA1058	--	--	NIL
F-Board TNPA1113	NIL	--	--
F-Board TNPA1058	--	NIL	NIL
N-Board TNP2AA027	AB	AB	AB
P-Board TNPH0200	AC	AC	AB
X-Board TNPA1057	AB	NIL	NIL
Y-Board TNPA1059	AC	AC	AC

SPECIFICATIONS

Table 1. Receiver Features

Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

Location of Controls (Receiver)

OPERATION

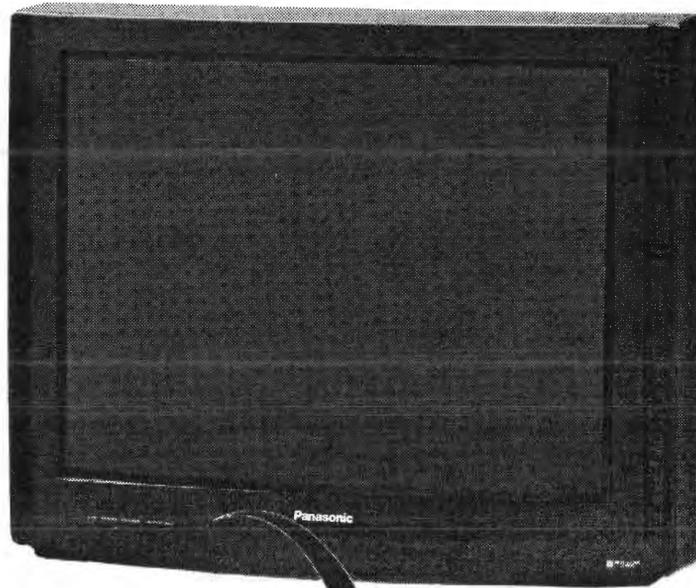
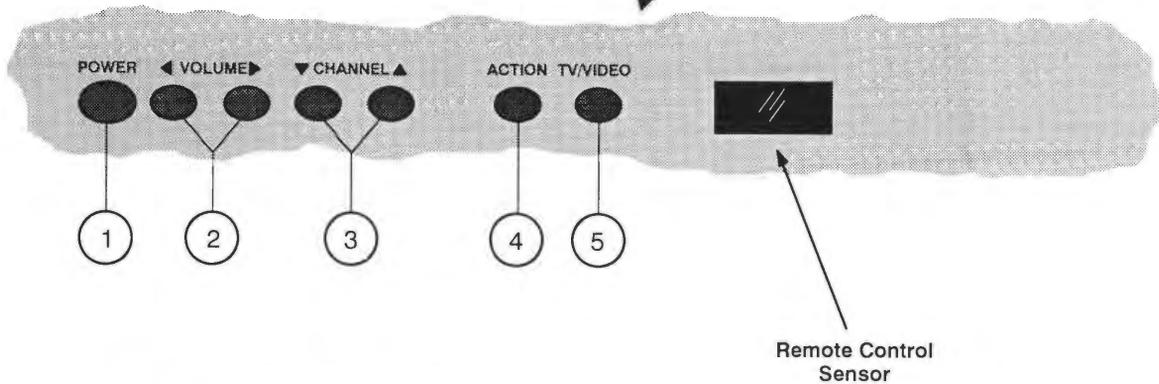


Figure 3. Location of controls (Receiver)

Note: Actual appearance may differ, but control placement will be similar.



- ① **Power Button** – Press to turn ON or OFF.
- ② **Volume Buttons** – Press to adjust Sound Level. Press to adjust Video Menus and select operating features when menus are displayed.
- ③ **Channel Buttons** – Press to select programmed channels. Press to highlight desired features when menus are displayed.
- ④ **Action Button** – Press to display Main Menu and access On Screen feature and Adjustment Menus.
- ⑤ **TV/Video Button** – Press to select TV or Video Input.

Location of Controls (Remote)



EUR511170
(CT-27SF25W & CT-27XF25CW)

Power Button

Press to turn ON or OFF.

TV/Video Button

Press to select TV or Video Input.

Mute Button

Press to mute sound. A second press resumes sound. Press also to access and delete Closed Caption display.

Channel Buttons

Press to select channels. Use with Volume buttons to navigate in menus.

Volume Buttons

Press to adjust TV sound level. Use with Channel buttons to navigate in menus.

Action Button

Press to display Main Menu and access or exit On Screen feature and Adjustment Menus.

R-Tune (Rapid Tune) Button

Press to switch to the previous channel.

Recall Button

Press to display Time, status of Sleep Timer, Channel, Video Mode and Channel Caption (Station Identifier).

Keypad Buttons

Press desired channel number to randomly access any channel.



EUR511151
(CT-27SF35W & CT-27XF35WC)
(CT-36SF35W & CT-36XF35WC)

Figure 4. Location of controls (Remote)

Chassis Service Adjustment Procedures

All service adjustments are factory preset and should not require adjustments unless controls and/or associated components are replaced.

Note: Connect the (-) lead of the voltmeter to the appropriate ground for the circuit being checked. When necessary to use a line operated ground, the ground indication (⚡) is marked. For this ground use IC801 heat sink. For all other circuits, connect the (-) lead of the voltmeter to the line isolated ground (⚡) tuner shield, IC451 heat sink, TP-3 or AV jacks.

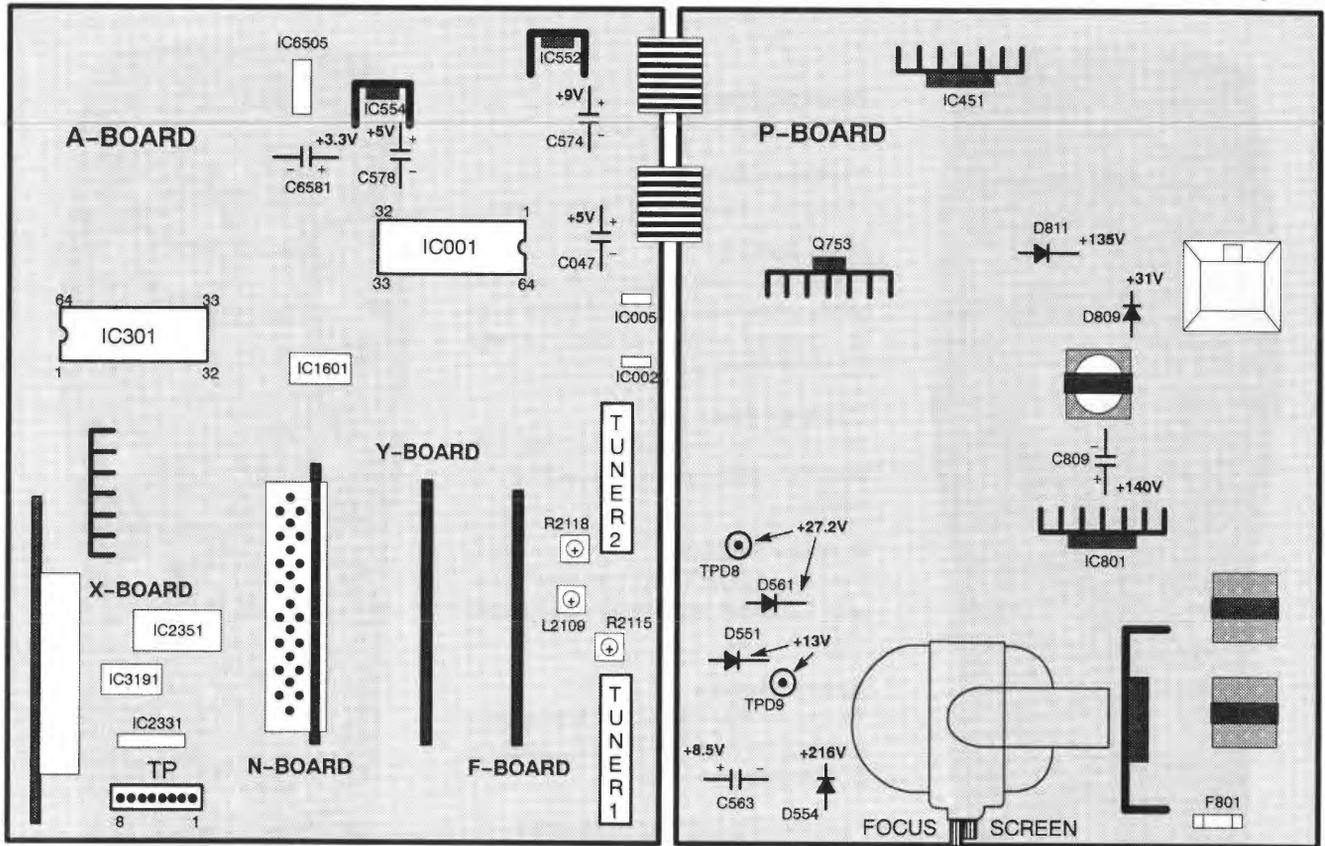


Figure 5. Test Points

141V B+ Voltage Confirmation

- Using the Picture Menu, adjust **BRIGHT**, **PICTURE**, and **COLOR** to minimum. Set **AUTOCOLOR** to **OFF**.
- Connect a DVM between **C809**, + side (P-Board) and hot ground (⚡).
- Confirm that B+ voltage is **140V ±2V**.

Source Voltage Chart

Connect 120V AC line input. Set **BRIGHT** and **PICTURE** to Minimum, using the Picture Menu. Set **AUTOCOLOR** to **OFF**. Use hot (⚡) or cold (⚡) ground for minus lead of DVM as needed.

Location	27"	36"
D809 Cathode (P-Board)	+31V±3V	+31V±3V
D811 Cathode (P-Board)	+135V±5V	+135V±5V
C047 (+) side (A-Board)	+5.0V ±0.15V	+5.0V ±0.15V
C574 (+) side (A-Board)	+9.0V ±0.25V	+9.0V ±0.25V
C578 (+) side (A-Board)	+5.0V ±0.2V	+5.0V ±0.2V
C6581 (+) side (A-Board) ** 2tuner model only	+3.3V ±0.1V**	+3.3V ±0.1V

Location	27"	36"
TPD8 D561 Cathode (P-Board)	+28.2V ±2V	+27.2V ±2V
TPD9 D551 Cathode (P-Board)	+13.0V ±1V	+13.0V ±1V
C563 (+) side (P-Board)	+8.5V ±1V	+8.5V ±1V
C809 (+) side (P-Board)	+140V ±2V	+140V ±2V
D554 Cathode (P-Board)	+216V ±15V	+216V ±15V

High Voltage Check

- Select an active TV channel and confirm that horizontal is in sync.
- Confirm B+ 141.2V is within limit.
- Adjust **BRIGHT** and **PICTURE** Video Controls of **PICTURE** Icon menu to Minimum.
- Set **AUTOCOLOR** of **PICTURE** Icon menu to **OFF**.
- Using a calibrated high voltage meter confirm that High Voltage is: **28.7kV±1.0kV (27")** and **31.0kV±1.0kV (36")**.

Disassembly for Service

Back Cover.

Remove from the back of the Receiver all screws marked with an arrow (←).

Note: screw configuration and number of screws may vary depending on the model of the Receiver serviced; various models are covered in this Manual. Note screw size and type used for each location

1. 3 screws at the top edge of the Receiver.
2. 2 screws at the bottom edge of the Receiver.
3. 1 screw by the AC line cord.
4. 1 screw by the Antenna/Splitter input.
5. 3 screws by the A/V jacks.
6. 1 screw to the left of the AC line cord in a recessed area.

Main Chassis: A-Board Assembly (F, N, X, and Y-Boards included) & P-Board

The N, U, and X-Boards are assembled on the Main chassis (A-Board). When servicing these boards, extension cables may be required. Cables kit can be ordered from Matsushita Services Company, Part No. TXAZS011SER. The A-Board assembly rests in a chassis tray along with the P-Board (Power Supply).

Slide chassis tray out. Gently lift tray and pull out. Disconnect plug connectors; release wire ties and holders as required for complete chassis removal.

- a. The A-Board is secured to the chassis tray with 10 screws.
- b. The P-Board is secured to the chassis tray with 7 screws.
- c. The A-Board is mated to the P-Board with two flexible connectors, A52 & A53 (P2 & P3 on the P-Board, respectively). To remove either boards, unplug the connectors on the A-Board.

C-Board - CRT Output

Plugs into socket on CRT neck.

F-Board -3D Comb Filter

Plugs onto the A-Board between the X and Y-Boards at the A11 and A12 connectors.

Note: Use a small flat head screwdriver to release the connector locking tabs.

N-Board - VIF/SIF & MTS Decoder

Soldered on the A-Board to the right of the Y-Board at the A21 and A22 connectors.

Y-Board - PIP Processing

Plugs onto the A-Board between the F and N-Boards at the A15 and A16 connectors.

Note: Use a small flat head screwdriver to release the connector locking tabs.

X-Board - AV1/AV2 Jacks, S-Video Connector, A/V Switch, S-Video Switch, Comb Filter and To Audio AMP Jacks

Plugs onto the left side of the A-Board to the left of the F-Board at the A1 connector.

R & L Speakers

4 screws secure each speaker to the front cabinet.

Disassembly for CRT Replacement

1. Discharge the CRT as instructed in the **Safety Precautions** (see page 2) and remove 2nd anode button from the CRT.
2. Remove Speaker Modules (R & L).
3. Disconnect connectors:
A-Board = A11, A13, A19, A26, Yoke (DY) and A83 single black wire.
CRT-Board = C1, C3 and C19 (black dag ground).
P-Board = Degauss coil (Deg) & P3.
4. Perform complete removal of Main chassis, Power Supply (P-Board) and CRT-Board as instructed in **Disassembly For Service**.

CRT Replacement

1. Perform **Disassembly for CRT Replacement** procedure.
2. Insure that the CRT H.V. anode button is discharged before handling CRT. See **Safety Precautions** (page 2) on handling the picture tube.
3. Remove the remaining components from the CRT neck and place cabinet face down on a soft pad.
4. Remove the CRT mounting screws from each corner. Remove the CRT with the degaussing coil and the dag ground braid attached.
5. Remove the degaussing coil from the clampers at each corner of the CRT. (Note original location and mounting of degaussing coil assembly to insure proper re-installation on the replacement CRT.)
6. Remove the dag ground braid by unhooking the coil spring from the bottom CRT mounting ears and releasing braid ends from the upper mounting ears.
7. Mount the dag ground braid on the replacement CRT.
8. Snap on new degaussing coil clampers to each corner mounting ear of replacement CRT and replace degaussing coil. Make sure coil fastens to all clamps. Dress coil as originally installed.
Note: Degaussing coil must be dressed 2" away from the deflection yoke.
9. Mount the replacement CRT into cabinet.
10. Replace components and re-install chassis into the cabinet. Make sure all plugs get connected. (disconnected in **Disassembly for CRT Replacement**, Step 3.)

Purity and Convergence Procedure

Adjustment is necessary only if the CRT or the deflection yoke is replaced or if the setting was disturbed. The complete procedure consists of:

1. Initial static convergence.
2. Setting the purity.
3. Final static convergence.

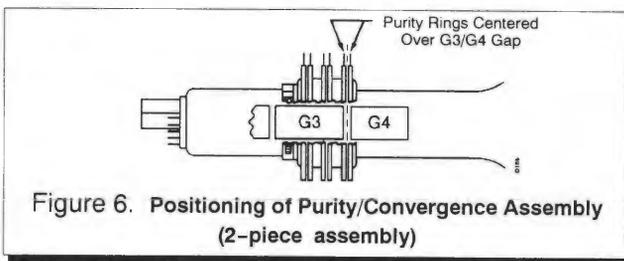
When the CRT or the Yoke is Replaced

Place the yoke on the CRT neck (do not tighten the clamp).

For a 2-piece assembly (see Figure 6):

Position purity/convergence assembly as shown and tighten clamp snugly. Cut the hot-melt glue seal on assembly and place like tabs of purity device together at 12 o'clock to reduce its magnetic field effect. Manually degauss the CRT.

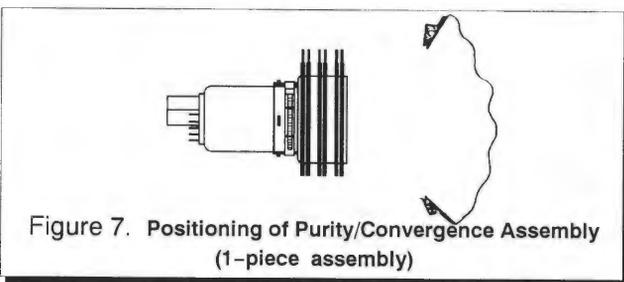
Turn the Receiver ON and slide the deflection yoke back and forth on the neck of the CRT. Stop at the position that produces a near white, uniform raster.



For a 1-piece assembly (see Figure 7):

Place like tabs of purity devices together at 12 O'Clock to reduce any magnetic field effect. Manually degauss the set.

Connect a Black/White pattern generator and tune the receiver to the signal. Slide the deflection yoke & purity ring assembly back and forth on the CRT neck. Stop at a position that produces a near white signal.



Initial Center Static Convergence

Connect a dot/crosshatch generator to the Receiver and tune in signal. Observe misconvergence at center of the screen only.

Adjust the 4 pole magnet (center rings); separate tabs and rotate to converge blue with red.

Adjust the 6 pole magnet (rear rings); separate tabs and rotate to converge blue and red (magenta) with green.

NOTE: Precise convergence at this point is not important.

Purity Adjustment

When the Receiver is in the Serviceman Mode for making electronic adjustments, press the **Recall** button on the Remote Control to enter Purity Check. (See **Service Adjustments Electronic Controls**.)

Operate the Receiver for 60 minutes using the first Purity check field (white screen) to stabilize the CRT.

Fully degauss the Receiver by using an external degaussing coil.

Press the **Recall** button on the Remote Control again until the Purity Check (green screen) appears.

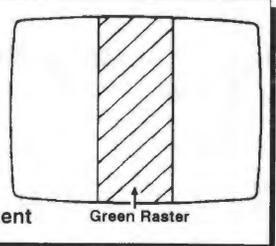
For a 2-piece assembly (see Figure 6):

Loosen the deflection yoke clamp screw and move the deflection yoke back as close to the purity magnet as possible.

Adjust the front rings to set the vertical green raster precisely at the center of the screen (see Figure 8).

NOTES:

1. CRT warm up with white screen (three guns activated) is needed to stabilize the shadow mask expansion.
2. Initial center static convergence (roughly centers three gun beams) is required in order to perform purity adjustment.



Slowly move the deflection yoke forward until the best overall green screen is displayed.

For a 1-piece assembly (see Figure 7):

Slowly move the deflection yoke and purity rings assembly toward the CRT board and adjust the purity magnet rings to set vertical green raster at center of screen (Shown above)

Gradually move the deflection yoke & purity rings forward and adjust for the best overall green screen.

Continue from here for either assemblies:

Tighten the deflection yoke clamp screw.

Press the **Recall** button on the Remote Control again until the Purity Check (blue screen) and (red screen) appear and observe that good purity is obtained on each respective field.

Press the **Recall** button on the Remote Control again until Purity check (white screen) appears. Observe the screen for uniform white. If purity has not been achieved, repeat the above procedure.

Final Convergence Procedure

NOTE: Vertical size and focus adjustments must be completed prior to performing the convergence adjustment. Connect a dot pattern generator to the Receiver. The **Brightness** level should not be higher than necessary to obtain a clear pattern.

Converge the red and blue dots at the center of the screen by rotating the 4 pole (R with B) Static Convergence Magnets.

Align the converged red/blue dots with the green dots at the center of the screen by rotating the 6 pole (R/B with G) Static Convergence Magnets. Melt wax with soldering iron to reseal the magnets.

Slightly tilt vertically and horizontally (do not rotate) the deflection yoke to obtain a good overall convergence.

If convergence is not reached at the edges, insert permalloy (see next page) from the DY corners to achieve proper convergence. Recheck for purity and readjust if necessary.

After vertical adjustment of the yoke, insert wedge at 11 o'clock position, then make the horizontal tilt adjustment.

Secure the deflection yoke by inserting two side wedges at 3 and 7 o'clock positions.

Apply adhesive between tab (thin portion) of wedge and CRT and place tape over the tab to secure to the CRT.

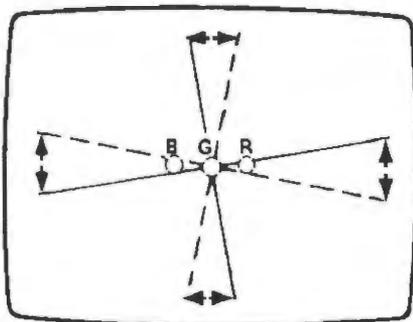
Permalloy Convergence Corrector Strip (Part No. OFMK014ZZ)

This strip is used in some sets to match the yoke and CRT for optimum convergence. If the yoke or CRT is replaced, the strip may not be required.

First converge the set without the strip and observe the corners.

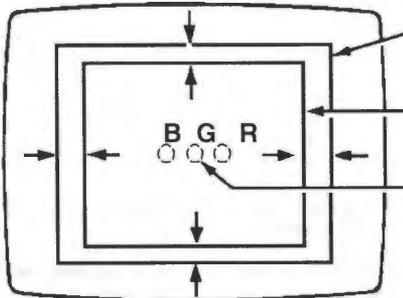
If correction is needed:

1. Place strip between CRT and yoke, in quadrant needing correction. Slowly move it around for desired results.
2. Press adhesive tightly to the CRT and secure with tape.



As the yoke is moved vertically, the rasters produced by the outside guns rotate in opposite directions.

Figure 9. Vertical Yoke Movement



Raster produced from one of the outside electron beams

Raster from the other outside electron beam

Static convergence magnets are set for center convergence

As the yoke is moved horizontally, one raster gets larger while the other gets smaller

Figure 10. Horizontal Yoke Movement

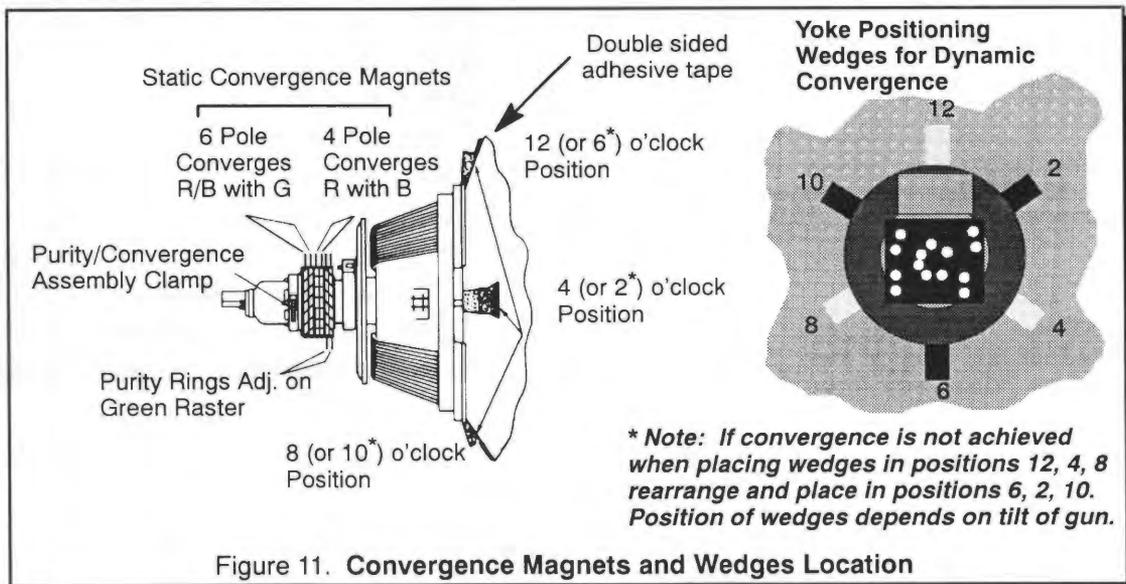


Figure 11. Convergence Magnets and Wedges Location

Serviceman Mode (Electronic Controls)

This Receiver has electronic technology using the I²C Bus Concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed by using the "On Screen Display Menu". (The **Serviceman Adjustment Mode**.)

Note: It is suggested that the technician reads all the way through and understand the following procedure for Entering/Exiting the **Serviceman Adjustment Mode**; then proceed with the instructions working with the Receiver. When becoming familiar with the procedure, the Flow Chart for Serviceman Mode (see page 56) may be used as a quick guide.

Entering Serviceman Mode:

At times when minor adjustments need to be done to the electronic controls, the method of Entering the Serviceman Mode without removal of the cabinet back is as follows using the Remote Control:

1. Select SET-UP icon and select CABLE mode.
2. Select TIMER Icon and set SLEEP timer for 30.
3. Press ACTION button twice to exit Menu.
Tune to Channel 124.
Adjust VOLUME to Minimum (0).
On Receiver press the VOL ◀ button (decrease). Red "CHK" appears in upper corner.

To toggle between Aging and Serviceman modes:

While the "CHK" is displayed on the left top corner of the CRT, pressing the **Action** and the **Volume UP** buttons on the Receiver simultaneously will toggle between the modes.

3. Press the **Power** button on the Remote Control to select one of five Serviceman Adjustment Modes.
 - a. B = Serviceman VCJ SUB ADJUSTMENTS
 - b. C = Serviceman W.B. ADJUSTMENTS
 - c. D = Serviceman PINCUSHION ADJUSTMENTS
 - d. S = Serviceman OPTIONS ADJUSTMENTS
 - e. "CHK" = Normal operation of CHANNEL ▲▼ and VOLUME ◀▶

Note: Only the applicable settings for the Receiver serviced will be available (see a in Figure 12).

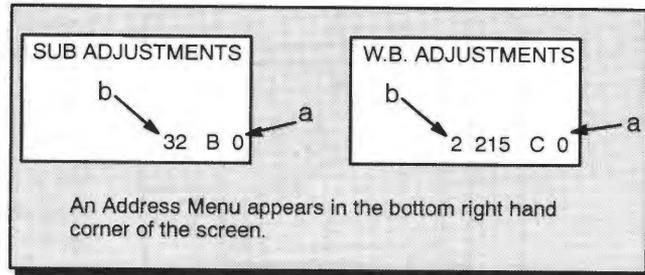


Figure 12. Serviceman Mode Menu Adjustments

For DAC Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 9 available Service Adjustments (a in Figure 12).

Important Note: Write down the original value set (b in Figure 12) for each address before modifying anything. It is easy to erroneously adjust the wrong item.

2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).

Sub Adjustment Mode			
Mode	Adjustment	Range	Default
B 00	Sub color	0~63	32
B 01	Sub Tint	0~63	32
B 02	Sub Brightness	0~192	96
B 03	Sub Contrast	0~37	32
B 04	RF AGC	0~255	32
B 05	Sub Brightness for AI (AI on)	0~192	96
B 06	VCJ Sharpness	0~127	32
B 07	Sub Color Correlation (AI on)	0~15	7
B 08	Sub Tint Correlation (video)	0~15	7

Figure 13. Sub Adjustment Mode

Press the **Power** button on the Remote Control to select the Serviceman White Balance Adjustment Mode.

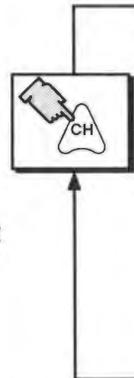
For Cut Off Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 11 available Service Adjustments (a in Figure 12).

Important Note: Write down the original value set (b in Figure 12) for each address adjustment before modifying anything. It is easy to erroneously adjust the wrong item.

2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).

**** Note:** Range is in steps:
 0 20 ~ 0 235
 1 20 ~ 1 235
 2 20 ~ 2 235
 3 20 ~ 3 235



CutOff Adjustment Mode				
Mode	Adjustment	Range	Default	
C00	R-Cutoff	**	2 156	
C01	G-Cutoff	0~255	32	
C02	B-Cutoff	**	96	
C03	Brightness	0~63	32	
C04	Sub Brightness	0~192	87	
C05	R-Drive	0~255	96	
C06	B-Drive	0~255	96	
C07	R-Drive Correction (COO)	0~63	32	
C08	B-Drive Correction (COO)	0~63	32	
C09	R-Drive Correction (WAR)	0~63	32	
C0A	B-Drive Correction (WAR)	0~63	32	

Figure 14. White Balance Adjustment Mode

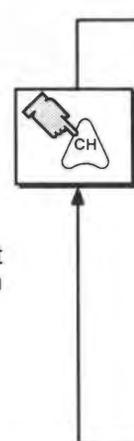
Press the **Power** button on the Remote Control to select the Serviceman Pincushion Adjustment Mode.

For Pincushion Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 12 available Service Adjustments (a in Figure 12).

Important Note: Write down the original value set (b in Figure 12) for each address before modifying anything. It is easy to erroneously adjust the wrong item.

2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).



Pincushion Adjustment Mode				
Mode	Adjustment	Range	Default	
D00	Vertical Amplitude	0~127	32	
D01	Vertical Linearity	0~63	32	
D02	Vertical S Correction	0~63	32	
D03	Horizontal Amplitude	0~63	32	
D04	Horizontal Center	0~31	15	
D05	EW Parabola	0~63	16	
D06	Trapezoid	0~63	32	
D07	EW Corner 2	0~15	7	
D08	EW Corner 1	0~15	7	
D09	Vertical EHT	0~15	8	
D0A	Horizontal EHT	0~15	8	
D0B	Vertical Position	0~63	32	

Figure 15. Pincushion Adjustment Mode

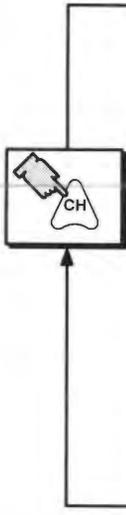
Press the **Power** button on the Remote Control to select the Serviceman PIP Adjustment Mode.

For PIP Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 14 available Service Adjustments (a in Figure 12).

Important Note: Write down the original value set (b in Figure 12) for each address adjustment before modifying anything. It is easy to erroneously adjust the wrong item.

2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).



PIP Adjustment Mode				
Mode	Adjustment	Range	Default	
P00	PIP Color	0~127	63	
P01	PIP Tint	0~255	54	
P02	PIP Brightness	0~31	15	
P03	PIP Contrast	0~127	66	
P04	PIP V Position 9 up	0~255	120	
P05	PIP V Position 9 down	0~255	122	
P06	PIP H Position 9 left	0~255	32	
P07	PIP H Position 9 right	0~255	7	
P08	PIP V Position 16 up	0~255	7	
P09	PIP V Position 16 down	0~255	8	
P0A	PIP H Position 16 left	0~255	8	
P0B	PIP H Position 16 right	0~255	32	
P0C	PIP Freerun	0~0	0	
P0D	PIP Y Delay	0~15	7	

Figure 16. PIP Adjustment Mode

Press the **Power** button on the Remote Control to select the Serviceman Options Adjustment Mode.

For Options Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 14 available Service Adjustments (a in Figure 12).

Important Note: Write down the original value set (b in Figure 12) for each address adjustment before modifying anything. It is easy to erroneously adjust the wrong item.

2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).



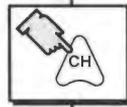
Options Adjustment Mode				
Mode	Adjustment	Range	Default	
S00	Preshoot/Overshoot	0~7	3	
S01	Black Expansion Gain	0~15	7	
S02	White Gamma Level	0~15	7	
S03	White Gamma Gain	0~15	8	
S04	Small Gamma Level	0~15	7	
S05	R-Y Demodulation Axis (angle)	0~31	16	
S06	R-Y Demodulation Axis (gain)	0~63	32	
S07	G-Y Ratio SW	0~3	1	
S08	White Lettering Correction	0~15	7	
S09	White Lettering Slice Vol	0~15	8	
S0A	VCJ-CD-TV	0~255	120	
S0B	VCJ-CD-AD	0~255	120	
S0C	Grad. of Contrast	0~255	122	
S0D	MTS Input Level	0~63	32	
S0E	MTS PLL VCO	0~63	32	
S0F	MTS Filter	0~63	32	
S10	MTS Low Separation	0~63	32	
S11	MTS High Separation	0~63	32	
S12	Clock Adjustment	0~255	128	
S13	S-Cutoff R	0~28	12	
S14	S-Cutoff B	0~28	15	
S15	Loudness Compensation	0~15	8	
S16	CC Digital Filter SW	0~1	1	
S17	CC Scroll	0~2	1	
S18	Spatializer Effect	0~63	32	

Figure 17. Options Adjustment Mode

For Y Options Adjustments:

1. Press **Channel Up/Down** on the Remote Control to select one of the 14 available Service Adjustments (a in Figure 12).
2. Press **Volume Up/Down** on the Remote Control to adjust the level of the selected Service Adjustment (b in Figure 12).
3. Either press the **POWER** button on the remote control to loop back to setting of the SUB ADJ Mode, OR

press **ACTION** and **POWER** buttons on the Receiver simultaneously for at least 2 seconds to return the Receiver to normal mode (exit Serviceman Mode).



Y Options Adjustment Mode			
Mode	Adjustment	Range	Default
Y00	Sync Separation	0~7	4
Y01	Sync Separation	0~255	122
Y02	Sync Separation	0~255	122
Y03	Sync Separation	0~255	122
Y04	V Phase Comparison Hold(start)	0~7	3
Y05	V Phase Comparison Hold(end)	0~15	7
Y06	H Clamp Mode Level	0~255	122
Y07	Vertical Edge Coring Level	0~31	16
Y08	V Edge Correction Limit Level	0~15	7
Y09	3D non standard Judgment Level	0~15	8
Y0A	3D standard Judgment Level	0~15	8
Y0B	1F2F Movement Det High Level	~15	7
Y0C	1F2F Movement Det Low Level	0~15	7
Y0D	Movement Det Setting	0~15	7
Y0E	Movement Det Test	0~1	0
Y0F	Vertical Edge Gain	0~3	1
Y10	1F Color Movement Level Set	0~15	8
Y11	1F Color Movement Level Set	0~15	7
Y12	Movement Detection Setting	0~15	7
Y13	Color Movement Edge Det Level	0~15	8
Y14	1F Movement Detecton Level	0~15	7
Y15	2F Movement Detecton Level	0~15	7
Y16	1F Motion Detector Filter SW	0~1	0
Y17	1F Motion Det Edge Sensitivity	0~1	1
Y18	1F Motion Det Sensitivity	0~15	8
Y19	1F Motion Detection High Level	0~15	7
Y1A	1F Motion Detection Low Level	0~15	7

Y Options Adjustment Mode			
Mode	Adjustment	Range	Default
Y1B	2F Motion Detection High Level	0~15	8
Y1C	2F Motion Detection Low Level	0~15	7
Y1D	Motion Detector Edge Det Level	0~15	7
Y1E	AI V Sampling Start Position	0~31	15
Y1F	AI V Sampling Stop Position	0~63	32
Y20	AI H Sampling Start Position	0~31	16
Y21	AI H Sampling Stop Position	0~63	32
Y22	Burst Gate Pulse position	0~255	122
Y23	Black Exp APL Threshold Level	0~63	32
Y24	Pedestal Compensation	0~7	3
Y25	Black Exp APL Calc Initial Value	0~31	15
Y26	Black Compensation Var Limiter	0~15	7
Y27	Luminance Differential Gain	0~3	1
Y28	Pseudo Contour Killer SW	0~1	0
Y29	Black Exp APL Reflection	0~1	0
Y2A	Base Value	0~15	7
Y2B	Black Exp Variance Reflection	0~3	2
Y2C	Anti Blooming APL Threshold	0~63	32
Y2D	S1 Histogram limiter	0~63	32
Y2E	S2 Histogram limiter	0~63	32
Y2F	S3 Histogram limiter	0~63	32
Y30	S4 Histogram limiter	0~63	32
Y31	Ymin Detection Offset	0~7	3
Y32	Ymin Detection Gain	0~3	2
Y33	Ymin limiter	0~63	32
Y34	Ymax limit value	0~63	32
Y35	AI flesh tone effect SW	0~1	1
Y36	APL Corr Imtr	0~63	32
Y37	APL Corr SW point	0~127	62
Y38	Color Cont Level (L APL)	0~63	32
Y39	Color Cont Gain (L APL)	0~3	1
Y3A	Color Cont Gain (H APL)	0~63	32
Y3B	AI Color Corr Gain	0~3	1
Y3C	Color Det Gain	0~3	1
Y3D	Color Det Threshold	0~63	32
Y3E	DSC Noise Removal	0~63	32
Y3F	DSC Delay SW	0~1	0
Y40	DSC Off SW	0~1	1
Y41	DSC Limit Level	0~255	112
Y42	Clip point of edge correct	0~15	8
Y43	BPF SW (RF)	0~3	2
Y44	BPF SW (video)	0~3	1
Y45	DSC Gain SW (big signal)	0~3	1
Y46	DSC Limit SW (big signal)	0~63	32
Y47	DSC Gain SW (sml signal)	0~3	1

SERVICE

Figure 18. Options Adjustment Mode
- Cont. from page 16

Options Adjustments – Cont.

Y Options Adjustment Mode				
Mode	Adjustment	Range	Default	
Y48	DSC Limit SW (sml signal)	0~63	32	
Y49	Edge Corr Gain SW	0~15	8	
Y4A	Detail Corr Limit level	0~15	8	
Y4B	B Corr Gain on Edge	0~3	1	
Y4C	Coring Level on Edge	0~63	32	
Y4D	VM Freq SW	0~1	1	
Y4E	VM Coring Level	0~15	8	
Y4F	VM Limit Level	0~127	62	
Y50	VM B Corr SW	0~1	0	
Y51	Y Delay Adj	0~7	3	
Y52	C Delay Adj (RF)	0~15	8	
Y53	C Delay Adj (video)	0~15	8	
Y54	DCOR Corr COEFFI A	0~255	122	
Y55	DCOR Corr COEFFI B	0~255	122	
Y56	DCOR Corr COEFFI C	0~255	122	
Y57	VLM Corr COEFFI A	0~255	122	

Y Options Adjustment Mode				
Mode	Adjustment	Range	Default	
Y58	VLM Corr COEFFI B	0~255	122	
Y59	Sharp offset Level	0~127	62	
Y5A	WECOR thresh (strng sig)	0~255	122	
Y5B	WECOR thresh (weak sig)	0~255	122	
Y5C	Brst in jdg time(16msXn)	0~255	122	
Y5D	Brst out jdg time(16msXn)	0~255	122	
Y5E	SD threshold (on)	0~255	122	
Y5F	SD threshold (off)	0~255	122	
Y60	VP threshold max	0~255	122	
Y61	VP threshold min	0~255	122	
Y62	VP JGE time(NG→OK)16msXn	0~255	122	
Y63	VP JGE time(OK→NG)16msXn	0~255	122	
Y64	STD JGE time 16msXn	0~255	122	
Y65	SD JGE time(NG→OK)16msXn	0~255	122	
Y66	SD JGE time(OK→NG)16msXn	0~255	122	
Y67	Fre Avg Quantity	0~4	2	

Figure 19. Options Adjustment Mode – Cont. from page 16

SERVICE

To Check Purity:

Press the **Recall** button on the Remote Control when in Serviceman Modes (red "CHK" is displayed) to enter the Purity Field Check Mode.

Note: The Receiver must be in the Serviceman Mode to display color.

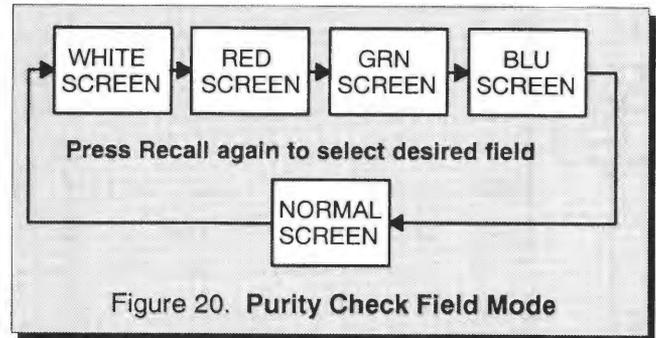


Figure 20. Purity Check Field Mode

IMPORTANT NOTE: Always Exit the Serviceman Mode following Adjustments.

Exiting the Serviceman Mode:

Press the **Action** and the **Power** buttons on the Receiver simultaneously for at least 2 seconds.

"The Receiver exits Serviceman Mode".

The Receiver momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.

Helpful Hints

Entering Serviceman Mode (Other Method – back open):

- While the Receiver is ON and operating in Normal Mode, momentarily short test point FA1 to cold ground () FA2 (A-Board: TP pin 8 to pin 3).
"The Receiver enters the Aging Mode".
Yellow letters "CHK" appear in the upper left corner of the CRT.
(The Volume Up/Down will adjust rapidly.)
- Simultaneously **press** the **Action** and the **Volume UP** buttons on the Receiver Control Panel.
"The Receiver enters the Serviceman's Mode".
The letters in "CHK" turn red.
(The Volume Up/Down will adjust normally.)
(All customer controls are set to a nominal level.)

Service Sub-Adjustments (Electronic Controls)

RF AGC

Serviceman DAC Adjustment B4

This adjustment should be performed only if overloading on strong signal or busy background (snow) is present on moderate strength signals.

Preparation

Connect DVM to TP15.

Procedure

1. In Serviceman Mode for making electronic adjustments, select DAC adjustment (B4) and decrease it until snow appears.
2. Note DVM reading.
3. Increase the adjustment until the snow is eliminated.
4. Confirm that DVM reading has increased.

Sub-Brightness

Serviceman DAC Adjustment (B2)

This adjustment is important for getting proper operation of customer brightness and picture controls. The adjustment must be made after Sub Contrast or Color Temperature adjustments are made. **Do not adjust** the SCREEN VR after Sub-Brightness is set.

Preparation

Connect a color bar signal with 100 IRE white and 7.5 IRE black. (Switch COLOR to OFF on the generator.) Operate television for a minimum of 10 minutes prior to the adjustment.

Procedure

In Serviceman Mode for making electronic adjustments, select DAC adjustment (B2) and adjust until the black bar starts to look grey. Then decrease the adjustment to the point where grey turns to black.

Sub-Contrast

Serviceman DAC Adjustment (B3)

This adjustment is factory set. **Do not adjust** unless repairs are made to associated circuit, the CRT Board or the CRT is replaced.

Preparation

1. Connect a generator pattern with 87.5% modulation, 70% saturated color bar with a 100 IRE white and 7.5 black.

Note: The pattern used in this procedure is an EIA color bar pattern with 87.5% modulation with 100 IRE white and 7.5 black. Correlate the information in this procedure to your pattern used.

2. Set the Picture Icon Menu Video (Picture Icon Menu) controls as follow:
PICTURE = Max.
BRIGHTNESS, COLOR = Min.
SHARPNESS = Center.
3. Switch VIDEO NR to OFF.
4. In the Serviceman Mode:
(Note the original settings for B2, S1 & S2.) Then set B2, S1 & S2 to 0.
5. Connect the oscilloscope to TP47G (CRT-Board connector C1-4 or TP35). Set the scope time base to 20 μ s (horizontal).
6. Connect a jumper from TP-6 to ground (⏏).
7. Connect a jumper from TPD2 to ground (⏏).

Procedure

1. In the Serviceman Mode for electronic adjustments, select DAC Adjustment (B3) and adjust until **2.8Vp-p \pm 0.1V** from white level to black level is measured on video waveform (see Figure 21).

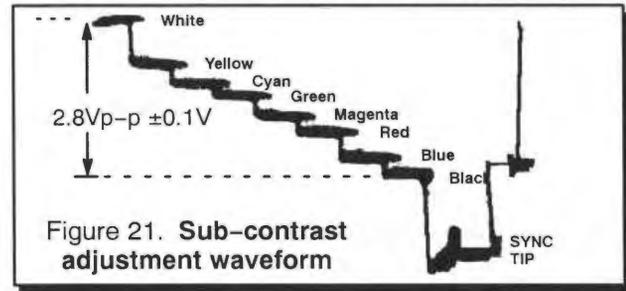


Figure 21. Sub-contrast adjustment waveform

2. Remove the jumpers (Preparation steps 5 & 6).
3. Reset B2, S1 & S2 to original setting.

Sub-Tint/Color Adjustment

Serviceman DAC Adjustment (B1) (B0)

Preparation

1. Normalize the Video adjustments (Picture Icon Menu).
2. Switch AUTOCOLOR (Picute Icon Menu) to OFF.
3. Connect a jumper between connector test pin TP-6 and ground (⏏).
4. Connect a jumper between TPD2 and ground (⏏).
5. In the Serviceman Mode for making electronic adjustments set the following:

Note original settings then set as follows:

RED Cutoff (C0)	2 020
GRN Cutoff (C1)	128
BLU Cutoff (C2)	2 020
Black Expand Gain (S1)	00
White Gamma Level (S2)	00

Procedure

1. Connect a Rainbow Color Bar signal.
2. In the Serviceman Mode for making electronic adjustments, note DAC levels for RED DRIVE (C5) and BLU DRIVE (C6). Set each to 127.
3. Connect oscilloscope to the RED Output TP47R (A-Board) (or to connector C1 pin 5 or TP37 (CRT-Board)).
4. In the Serviceman Mode for making electronic adjustments, select DAC Sub Bright (B2) and adjust so that no saturation appears in the displayed waveform.
5. Select DAC SUB COLOR (B0) and adjust so that peak to peak amplitude is **2.4V \pm 0.05V** (see Figure 22).

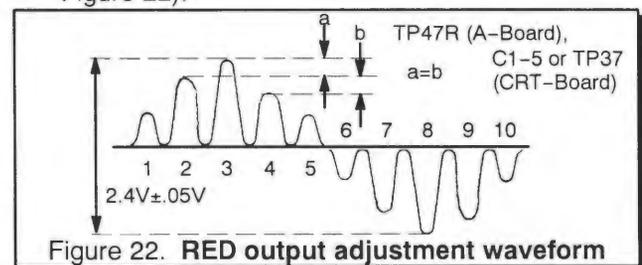
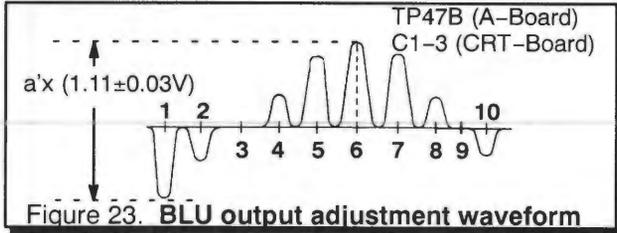


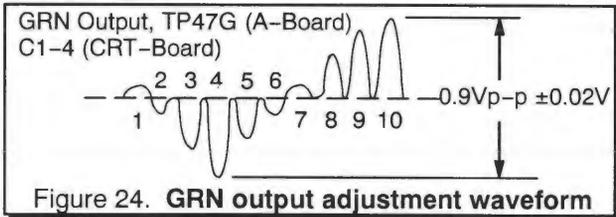
Figure 22. RED output adjustment waveform

6. Select DAC Sub Tint (B1) and adjust RED Output waveform so that peaks 2 is halfway between peaks 3 and 4 as shown in Figure 22.

- Measure new p-p waveform voltage and note the level.
- Connect oscilloscope to BLU Output (A-Board) or TP36 (CRT-Board).
- Select DAC Demodulation Gain (S6) and adjust so peak to peak is equal to step No. 7 p-p (a') times $1.11 \pm 0.03V$ (see Figure 23).



- Connect oscilloscope to RED Output (A-Board), connector C1 pin 5 or TP37 (CRT-Board). Repeat above step No. 6.
- Connect oscilloscope to GRN Output (A-Board) or connector C1 pin 4 or to TP35 (CRT-Board).
- Select DAC adjustment (B0) and adjust for waveform to measure $0.9V$ p-p $\pm 0.02V$ (see Figure 24).



- Remove jumpers (Preparation step 4 & 5).
- Reset DACs (S1) to 7 and (S2) to 15.
- Connect a Studio Color Bar signal and confirm that color phase and saturation are normal.

White Balance (W.B.) Adjustment (B/W Tracking)

Serviceman DAC Adjust. (C0) (C1) (C2) (C3) (C5) (C6)

Minor Touch-Up Method

OBSERVE low and high brightness areas of a B/W picture for proper tracking. Adjust only as required for "good grey scale and warm highlights".

LOW LIGHT areas - In Serviceman Mode for making electronic adjustments, select cutoff (C0) RED, (C1) GRN, (C2) BLU and adjust for picture to look grey.

HIGH LIGHT areas - In Serviceman Mode for making electronic adjustments, select Drive (C5) RED, (C6) BLU and adjust for warm whites.

Complete Adjustment

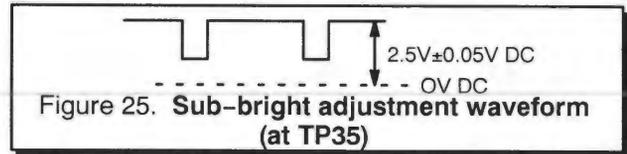
Preparation

- Turn Receiver ON and allow 10 minutes warm up at high brightness.
- Apply color bar signal with color set to OFF.
- Set Picture Icon Menu Video controls to Normalize.
- Enter Serviceman Mode and set DAC adjust low lights (C0, C2) to minimum, (C1) to 128 and set DAC adjustments high lights (C5, C6) to 84. Set Sub Bright DAC (C4) to minimum.
- Connect 4.7KΩ jumper from TP-8 to ground (⚡).
- Turn SCREEN VR (part of FBT T551) fully counterclockwise.

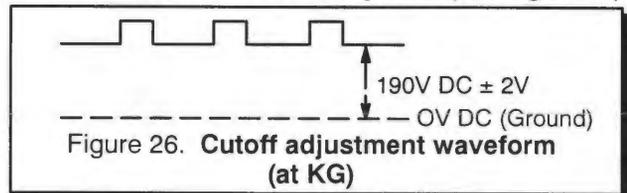
Procedure

- Connect the oscilloscope to TP35 (CRT-Board).

- In Serviceman Mode for making electronic adjustment, select Sub Bright (C4).
- Press RECALL button on the Remote Control to collapse the raster. (Service SW)
- Observe oscilloscope waveform and adjust Serviceman Mode Sub Bright DAC (C4) until $2.5V \pm 0.05V$ above DC ground is measured (see Figure 25).



- Press RECALL button on the Remote Control to restore the raster.
- Connect scope to GRN Cathode (KG) on CRT-Board.
- In Serviceman Mode for making electronic adjustments, select GREEN CUTOFF DAC (C1).
- Press RECALL button on the Remote Control to collapse the raster. (Service SW)
- View scope trace at Horizontal rate and adjust Serviceman Mode DAC (C1) for the scanning period to be $190V \pm 2V$ above DC ground (see Figure 26).



- Turn Screen VR (part of FBT) slowly clockwise until a faint green horizontal line appears.
- Using the other two colors Serviceman Mode DAC CUTOFF adjustments RED (C0) and BLU (C2), increase their setting to produce a white horizontal line.
- Press RECALL button on the Remote Control to restore full raster.
- Confirm a good gray scale by viewing B/W color bar pattern.
- Use Serviceman Mode for making electronic adjustments select DAC DRIVE adjustments RED (C5) and BLU (C6) and adjust for warm white in white color bar of pattern.
- Adjust Serviceman Mode BRIGHT (C3) from low scale to high scale and check Black and White tracking.
- If correction is needed perform **Minor Touch - Up Method**.
- Perform Sub Brightness adjustment procedure.

Service Pincushion Adjustments

Vertical DC Voltage and Dynamic Range Confirmation

Serviceman DAC Adjustment (Db)

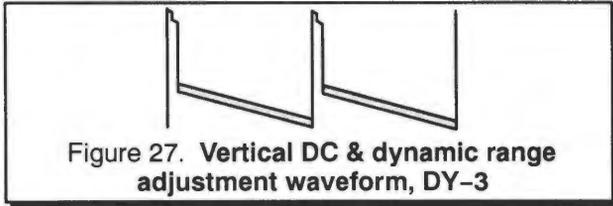
Preparation

- Connect DVM to deflection yoke DY-2 to ground.
- Connect Oscilloscope to deflection yoke DY-3 to ground.
- Apply a monoscope pattern.

Service Pincushion Adjustments (Cont.)

Procedure

1. Enter Serviceman Mode for making electronic adjustments. Select DAC adjustment (Db).
2. Adjust DAC Db for DVM reading of $13.0V \pm 0.1V$.
3. Confirm that the upper and lower side of the oscilloscope vertical waveform has no distortion (see Figure 27).



Vertical Linearity

Serviceman DAC Adjustment (D1)

Preparation

Apply a crosshatch pattern.

Procedure

Enter Serviceman Mode for electronic adjustments. Select DAC adjustment (D1) and adjust crosshatch pattern so boxes above horizontal center are the same proportion as boxes below horizontal center.

Vertical Size & S Correction

Serviceman DAC Adjustments (D0, D2)

Preparation

Apply a crosshatch pattern.

Procedure

1. Enter Serviceman Mode for making electronic adjustments.
2. Select DAC adjustment (D0) and decrease the size of the pattern.
3. Increase the (D0) adjustment until the pattern touches the top and bottom edge of the screen. Continue to increase the level until the pattern is approximately 1/2 inch larger.
4. Select DAC adjustment (D2) and adjust until the top and bottom squares are the same proportion as the center squares.
 - a. Increase the level to make top and bottom squares smaller.
 - b. Decrease the level to make top and bottom squares larger.

E-W Pincushion Correction

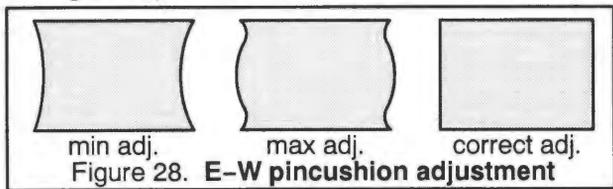
Serviceman DAC Adjustments (D5, D7, D8)

Preparation

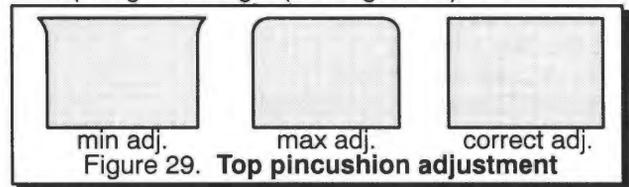
1. Apply a crosshatch pattern.
2. Normalize the PICTURE Icon Video adjustments.
3. Set PICTURE BRIGHTNESS and SHARPNESS at center, and set PICTURE CONTROL to max.
4. Set R786 (T/B Pincushion, on the A-Board) at center.

Procedure

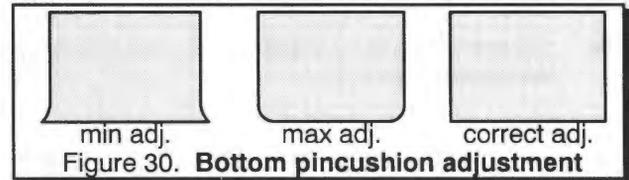
1. Enter Serviceman Mode for making electronic adjustments. Select DAC (D5). Adjust for 1st and 3rd vertical lines on E & W sides to be straight (see Figure 28).



2. Select DAC (D7) and adjust vertical lines so that the top edge is straight (see Figure 29).



3. Select DAC (D8) and adjust vertical lines so that the bottom edge is straight (see Figure 30).



Horizontal Centering

Serviceman DAC Adjustment (D4)

Preparation

1. Set the Brightness and Sharpness controls at center position; set the Picture control at max.
2. Apply a crosshatch signal.

Procedure

1. In Serviceman Mode for making electronic adjustments. Select DAC adjustment (D4) and adjust until the center of the crosshatch pattern is centered (horizontally) on CRT screen.
2. EXIT the Serviceman Adjustment Mode.

Horiz Size

Serviceman DAC Adjustment (D3)

Preparation

Apply a crosshatch pattern.

Procedure

1. In Serviceman Mode for making electronic adjustments select D3 and decrease the level until the pattern shrinks horizontally between the sides screen.
2. Increase D3 until the pattern fills horizontally to screen sides and advance the adjustment register additional 3 digits.

Keystone

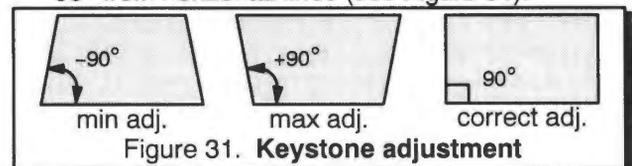
Serviceman DAC Adjustment (D6)

Preparation

Apply a crosshatch pattern.

Procedure

Enter Serviceman Mode for making adjustments. Select DAC (D6) and adjust so that vertical lines are 90° from horizontal lines (see Figure 31).



MTS Circuit Adjustments (SD, SE, SF, S10, & S11)

The MTS Circuit Adjustments require four steps:

1. Stereo VCO Adjustment.
2. Filter Adjustment.
3. Input Level Adjustment.
4. Stereo Separation Adjustment.

Stereo VCO Adjustment (SE)

Preparation:

1. Connect a frequency counter to **TPS24**.

Note: 15 seconds aging is required prior to performing the following procedure.

Procedure:

Adjust the MTS Stereo PLL VCO (**SE**) until the frequency counter measures **15.734kHz ±50Hz**.

Filter Adjustment (SF)

Preparation:

1. Connect a signal generator (sine wave) to antenna input.
2. Connect a scope to **TPS23**.

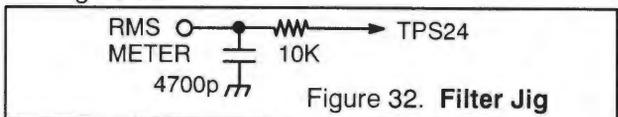
Procedure:

1. Apply the following signal from the signal generator: 15.734kHz, 100mV rms, sine wave.
2. Adjust the MTS Filter Adjustment (**SF**) until the amplitude displayed on the scope is minimum.

Input Level Adjustment (SD)

Preparation:

1. Connect an RMS meter with filter jig as shown in Figure 32.



2. Connect an RF signal generator to the RF antenna input.

Procedure:

1. Apply the following signal from the RF signal generator:
Video: 100 IRE flat field, 30% modulation.
Audio: 300Hz, 100% modulation, monaural (70 ±5dB, 75Ω OPEN, P/S 10dB).
Make sure that 75μs pre-emphasis is OFF.
2. Adjust the MTS Input Level Adjustment (**SD**) until the voltage measured is **210 ±5mV rms**.

Stereo Separation Adjustments (S10 & S11)

Preparation:

1. Connect an RF signal generator to the RF antenna input.
2. Connect a scope to **TPS24**.

Procedure:

1. Apply the following signal from the RF signal generator:
Video: 100 IRE flat field, 30% modulation.
Audio: 300Hz, 30% modulation, stereo (left only) (70 ±5dB, 75Ω OPEN, P/S 10dB).
2. Adjust the MTS Low-Level Separation Adjustment (**S10**) until the amplitude displayed on the scope is minimum.
3. Apply the following signal from the RF signal generator:
Video: 100 IRE flat field, 30% modulation.
Audio: 3kHz, 30% modulation, stereo (left only) (70 ±5dB, 75Ω OPEN, P/S 10dB).
4. Adjust the MTS High-Level Separation Adjustment (**S11**) until the amplitude displayed on the scope is minimum.
5. Repeat above steps 2 through 4 until the amplitude is at minimum for both signals.

Clock Adjustment (S12)

Preparation:

Connect the frequency counter from **TPS1** (IC001 Pin 34) to cold ground (th).

Note: Frequency Counter probe capacitance should be 8pF or less.

Procedure:

1. Turn the Receiver OFF with the AC power applied.
 2. Measure the frequency at **TPS1** (IC001 pin 34) and record the reading.
- Note:** Pin 34 measurement must have at least four digits of resolution following the decimal point
Example: 000.0000
3. Turn the Receiver back ON.
 4. Place the Receiver into Serviceman Mode for making electronic adjustments.
 5. Select the Options Adjustments and set **S12** (Clock Adjustment DAC) to 128.
 6. Calculate and set the **S12** per the formula in Figure 33:

$$S12 = 128 + 1.350 \times 10^6 \times \frac{\{187.5000 - \text{pin 34 [Hz]}\}}{187.5000}$$

Figure 33. Clock Adjustment Calculation

Note: Pin 34 measurement will not change regardless of the value stored in **S12**.

Service Adjustments (Mechanical Controls)

Video Level R115 (N-Board)

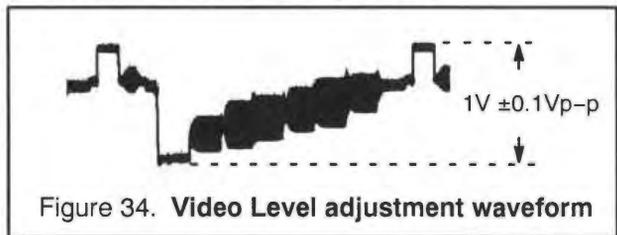
Caution: Do not adjust unless control has been replaced or control was accidentally misadjusted.

Preparation

Obtain an NTSC color bar pattern with 100 IRE white and 87.5% modulation.

Procedure

1. Connect oscilloscope to TP12 (connector A21 pin 6). Use cold ground for scope connection. Set scope at horizontal time base.
2. Adjust R115 for $1V \pm 0.1V_{p-p}$ from sync tip to white level (see Figure 34).
3. Set SUB CONTRAST adjustment.



AFC Field Adjustment L105 (N-Board)

1. Select TV antenna mode with Set Up Menu Icon.
2. Defeat AFC by applying a jumper from TPS7 to ground (//).
3. Connect a digital voltmeter to AFC test point TP16 (N2-6).
4. Use Remote Control to check all active High Band channels 7-13 for AFC voltage range. Select channel with AFC voltage in approximate center of voltage range.
5. Adjust L105 for $2.4V \pm 0.1V$ at TP16.
6. Check all active channels for proper AFC correction. Touch up L105 if required. Remove jumper set in step 2.

Note: Do not use TV/CABLE channel with offset carriers for adjustment or in determination of low and high range of AFC voltage.

Second Tuner Adjustments (2 tuner PIP only)

VCO and DET out Adjustment

Preparation:

1. Connect a DVM to TP16.
2. Connect a scope to TP12.
2. Age set for at least 20 sec. before adjusting.

Procedure:

1. Apply a studio color bar.
2. Connect a jumper between TPS7 and GND (//).
3. Adjust L2109 so that DVM reads $2.4 \pm 0.1V$.
4. Adjust R2115 so that Detection output (including sync. signal) is within range of $1.0 \pm 0.05V_{p-p}$.

AGC Adjustment

Preparation:

1. Connect a DVM to TP10.

Procedure:

1. Receive a $63 \pm 2dB$ (75 ohm open) signal.
2. Note reference voltage. Confirm that noise disappears when R2118 is turned fully clockwise and reappears when turned fully counterclockwise.
3. Slowly turn R2118 clockwise until the reference voltage is obtained.
4. Confirm RF AGC voltage (reference voltage) lowers when the signal field strength is increased by 3dB.

Focus (Part of T551)

Preparation

Connect Signal generator and select dot pattern.

Procedure

Adjust the FOCUS control to obtain the sharpest and clearest dot pattern.

adjust for best center

adjust for best area between center and top right corner.

IC2101 VIF/SIF IC – Block Diagram, AN5170K

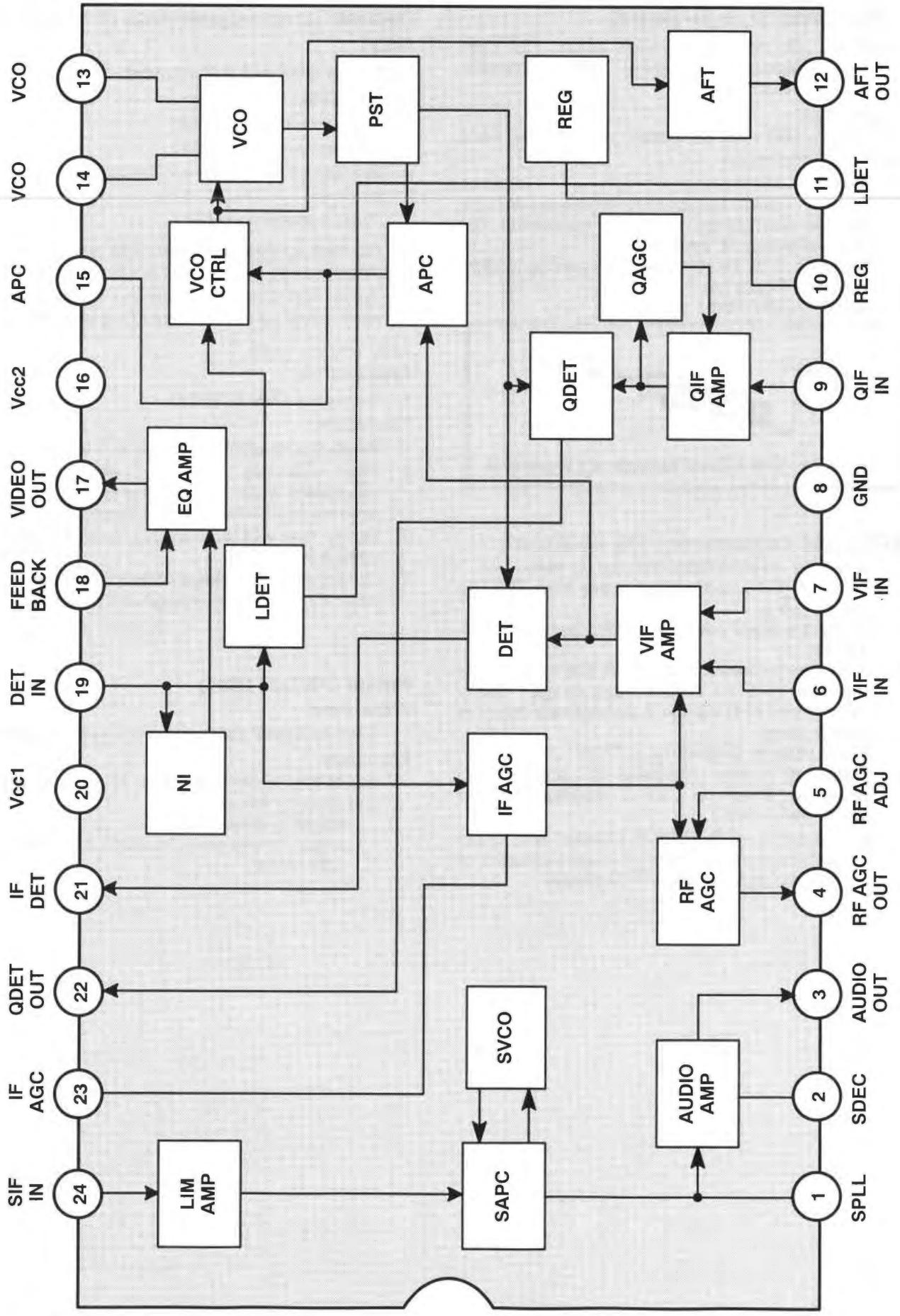
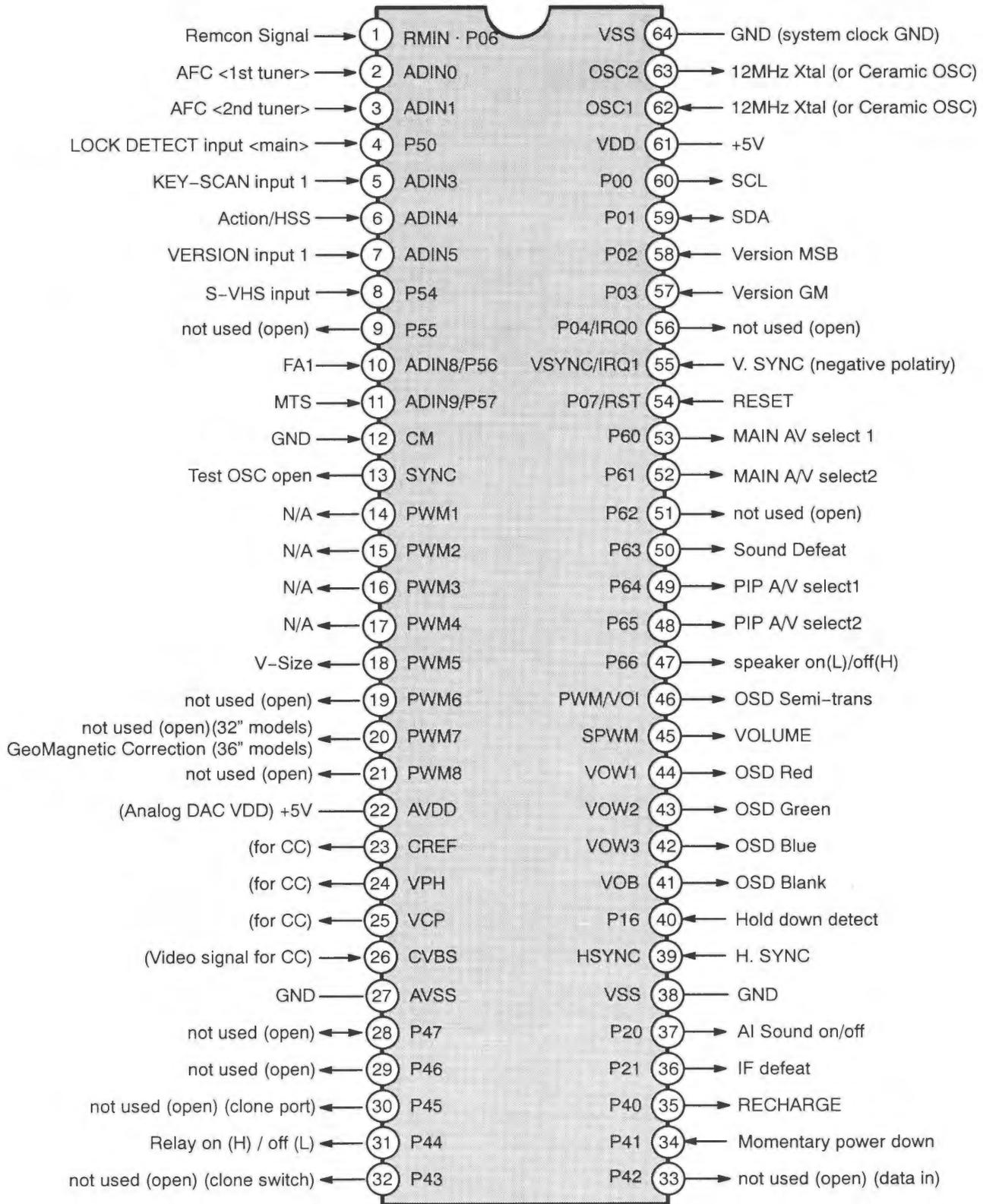


Figure 35. IC101 – VIF/SIF Block Diagram

IC001 MPU IN/OUT Pins and Functions



REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
CAPRISTORS			C101	TCUX1H103ZFN	CAP,C .01μF-Z-50V
CRA801	EXNG131P365	RES-CAP 130PF/3.6 MEG	C103	ECEA1CKA330	CAP,E 33μF/16V
CRA802	EXNG131P365	RES-CAP 130PF/3.6 MEG	C104	TCUX1H103ZFN	CAP,C .01μF-Z-50V
CAPACITORS			C105	ECA1HHGR22B	CAP,E .22μF-50V
C001	ECA1AM101	CAP,E 100μF/10V	C109	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C004	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C111	ECA1HHGR47B	CAP,E .47μF-50V
C005	ECA0JM101	CAP,E 100μF/6.3V	C112	ECUX1H270JCX	CAP,C 27PF-J-50V
C006	ECA1HM4R7	CAP,E 4.7μF/50V	C115	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C010	ECA1CM470	CAP,E 47μF/16V	C116	ECEA1CKA100	CAP,E 10μF/16V
C011	ECUX1H101JCX	CAP,C 100PF-J-50V	C135	ECUX1H270JCX	CAP,C 27PF-J-50V
C012	ECUX1H101JCX	CAP,C 100PF-J-50V	C140	ECUX1H300JCX	CAP,C 30PF-J-50V
C013	ECA1EM220	CAP,E 22μF/25V	C153	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C014	ECA1EM220	CAP,E 22μF/25V	C154	ECEA1HKAR22	CAP,E .22μF/50V
C015	ECUX1H181JCX	CAP,C 180PF-J-50V	C202	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C016	ECEA1HNR47U	CAP,E .47μF-50V	C207	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C017	EEANA1E1R0B	CAP,E 1.0μF-25V	C208	ECUX1H101JCX	CAP,C 100PF-J-50V
C021	TACCX103T50V	CAP,C .01μF/50V	C209	ECEA1HKA010	CAP,E 1.0μF/50V
C022	ECA1CM471	CAP,E 470μF/16V	C210	ECEA1CKA100	CAP,E 10μF/16V
C024	ECA0JM102	CAP,E 1000μF/6.3V	C212	ECUX1H100DCX	CAP,C 10PF-D-50V
C029	ECA1HM010	CAP,E 1.0μF/50V	C301	ECEA1CN470U	CAP,E 47μF-16V
C031	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C302	ECA1HM010	CAP,E 1.0μF/50V
C032	ECA1CM470	CAP,E 47μF/16V	C304	ECA1HM010	CAP,E 1.0μF/50V
C034	ECUX1H272KBX	CAP,C .0027μF-K-50V	C305	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C035	ECA1HM4R7	CAP,E 4.7μF/50V	C306	ECA1EM220	CAP,E 22μF/25V
C036	ECQB1H104JF	CAP,P .1μF-J-50V	C307	ECUX1H223ZFX	CAP,C .022μF-Z-50V
C037	ECUX1H101JCX	CAP,C 100PF-J-50V	C308	ECA1HM3R3	CAP,E 3.3μF/50V
C038	ECUX1H101JCX	CAP,C 100PF-J-50V	C309	ECEA1HN010U	CAP,E 1μF/50V
C039	ECUX1H220JCX	CAP,C 22PF-J-50V	C311	TCUX1H103KBN	CAP,C .01μF-K-50V
C040	ECUX1H270JCX	CAP,C 27PF-J-50V	C312	ECA1HM100	CAP,E 10μF/50V
C041	ECA0JM331	CAP,E 330μF/6.3V <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C313	ECA1VM470	CAP,E 47μF/35V
C041	ECA1AM102	CAP,E 1000μF/10V <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>	C314	ECA1CM101	CAP,E 100μF/16V
C042	ECQB1H223JF	CAP,P .022μF-J-50V	C315	ECA1EM220	CAP,E 22μF/25V
C043	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C316	ECA1HM4R7	CAP,E 4.7μF/50V
C044	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C317	ECA1HM4R7	CAP,E 4.7μF/50V
C045	ECA1EM100	CAP,E 10μF/25V	C318	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C046	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C319	ECA1HM101	CAP,E 100μF/50V
C047	ECA0JM222	CAP,E 2200μF/6.3V	C320	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C048	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C324	ECA1CM102	CAP,E 1000μF/16V
C049	ECA1CM101	CAP,E 100μF/16V	C330	ECUX1H101JCX	CAP,C 100PF-J-50V
C050	ECA1CM471	CAP,E 470μF/16V	C332	ECA1HM100	CAP,E 10μF/50V
C053	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C351	ECKD3D102KB	CAP,C .001μF-K-2KV
C054	TCUX1H103KBN	CAP,C .01μF-K-50V	C352	ECEA1HN010U	CAP,E 1μF/50V
C055	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C353	TACCW821T50V	CAP,C 820PF/50V
C081	ECA1HM010	CAP,E 1.0μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>	C354	TACCW821T50V	CAP,C 820PF/50V
C083	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C355	TACCW821T50V	CAP,C 820PF/50V
C084	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C356	ECA1CM100	CAP,E 10μF/16V
C085	ECA1EM220	CAP,E 22μF/25V	C357	ECKD2H821KB	CAP,C 820PF-K-500V
			C358	TACCW561T50V	CAP,C 560PF/50V
			C359	TACCW561T50V	CAP,C 560PF/50V <i>CT-36SF35W</i> <i>CT-36XF35CW</i>

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
C359	TACCW681T50V	CAP,C 680PF/50V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	C545	ECUX1H020CCX	CAP,C 2PF-C-50V <i>CT-36SF35W CT-36XF35CW</i>
C360	TACCW561T50V	CAP,C 560PF/50V	C545	ECUX1H560JCX	CAP,C 56PF-J-50V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C364	ECA1CM100	CAP,E 10μF/16V	C549	TCUX1H103KBN	CAP,C .01μF-K-50V
C366	ECKD2H332KB	CAP,C .0033μF-K-500V	C551	ECWH12H103JS	CAP,P .01μF-J-1.2KV <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C370	ECKD2H821KB	CAP,C 820PF-K-500V	C551	ECWH12H133JS	CAP,P .013μF-J-1.2KV <i>CT-36SF35W CT-36XF35CW</i>
C371	ECA1CM100	CAP,E 10μF/16V	C552	ECQM4333JZ	CAP,P .033μF-J-400V
C401	ECUX1H333K BX	CAP,C .033μF-K-50V	C553	ECA1CM472	CAP,E 4700μF-16V
C402	ECSF1EE105	CAP,T 1.0μF/25V	C554	ECKD3D821KB	CAP,C 820PF-K-2KV <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C403	ECSF1VE334	CAP,T .33μF/35V	C555	ECWH12H222JS	CAP,P .0022μF-J-1.2KV <i>CT-36SF35W CT-36XF35CW</i>
C404	ECA1HM010	CAP,E 1.0μF/50V	C556	ECKD3D102JB	CAP,C .001μF-J-2KV <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C407	ECA1CM221	CAP,E 220μF/16V	C557	ECKD3D102JB	CAP,C .001μF-J-2KV <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C409	ECUX1H471JCX	CAP,C 470PF-J-50V	C558	ECA1CM221	CAP,E 220μF/16V
C451	ECA1HHG2R2B	CAP,E 2.2μF-50V	C559	ECWF2394JBB	CAP,P .39μF-J-200V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
C452	ECQB1H473JF	CAP,P .047μF-J-50V	C559	ECWF2504JBQ	CAP,P .50μF-J-200V <i>CT-36SF35W CT-36XF35CW</i>
C453	ECA1VM471	CAP,E 470μF/35V	C560	ECEA1HN4R7U	CAP,E 4.7μF/50V
C454	ECA1VM221	CAP,E 220μF/35V	C561	ECKD2H561KB	CAP,C 560PF-K-500V
C455	ECA1VHG222E	CAP,E 2200μF-35V	C562	ECKD2H561KB	CAP,C 560PF-K-500V
C456	ECCF1H020CC	CAP,C 2PF-C-50V	C563	ECA1AM222	CAP,E 2200μF/10V
C457	ECA1CM101	CAP,E 100μF/16V	C564	ECKD2H561KB	CAP,C 560PF-K-500V
C458	ECQM1104JZ	CAP,P .1μF-J-100V	C565	ECA2EM100	CAP,E 10μF/250V
C466	ECA1CM330	CAP,E 33μF/16V	C566	ECA1CHG102B	CAP,E 1000μF-16V
C467	ECA1HM010	CAP,E 1.0μF/50V	C569	ECA1VM331	CAP,E 330μF/35V
C501	ECUX1H182JCX	CAP,C .0018μF-J-50V	C570	ECKD2H102KB	CAP,C .001μF-K-500V
C502	ECQB1H333JF	CAP,P .033μF-J-50V	C571	ECKD3D102KB	CAP,C .001μF-K-2KV <i>CT-36SF35W CT-36XF35CW</i>
C503	ECA1HM4R7	CAP,E 4.7μF/50V	C572	ECKD3D471JB	CAP,C 470PF-J-2KV
C504	ECUX1H221JUX	CAP,C 220PF-J-50V	C573	ECA1CM471	CAP,E 470μF/16V
C505	ECQB1H563JF	CAP,P .056μF-J-50V	C574	ECA1EM100	CAP,E 10μF/25V
C506	ECA1HM4R7	CAP,E 4.7μF/50V	C576	ECA1AM222	CAP,E 2200μF/10V
C507	ECQB1H124JF	CAP,P .12μF-K-50V	C577	ECA1AM222	CAP,E 2200μF/10V
C508	TCUX1H103KBN	CAP,C .01μF-K-50V	C578	ECA1EM100	CAP,E 10μF/25V
C509	ECUX1H820JCX	CAP,C 82PF-J-50V	C583	ECA1HM220	CAP,E 22μF/50V <i>CT-36SF35W CT-36XF35CW</i>
C511	ECKD2H122KB	CAP,C .0012μF-K-500V	C602	TCUX1H103KBN	CAP,C .01μF-K-50V
C512	ECA1HM3R3	CAP,E 3.3μF/50V <i>CT-36SF35W CT-36XF35CW</i>	C604	ECEA1HN2R2U	CAP,E 2.2μF/50V
C514	ECKD2H821KB	CAP,C 820PF-K-500V	C605	TCUX1H103KBN	CAP,C .01μF-K-50V
C521	ECUX1H121JCX	CAP,C 120PF-J-50V	C607	ECUX1H090DCX	CAP,C 9PF-D-50V
C522	ECUX1H121JCX	CAP,C 120PF-J-50V	C610	ECA1HMR22	CAP,E .22μF/50V
C523	ECUX1H560JCX	CAP,C 56PF-J-50V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	C611	ECA1HMR22	CAP,E .22μF/50V
C531	ECA1HM330	CAP,E 33μF/50V			
C532	TCUX1H103KBN	CAP,C .01μF-K-50V			
C534	TCUX1H103KBN	CAP,C .01μF-K-50V			
C535	ECUX1H222JCX	CAP,C .0022μF-J-50V <i>CT-36SF35W CT-36XF35CW</i>			
C535	ECUX1H222KBN	CAP,C .0022μF-K-50V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>			
C540	ECUX1H821JCX	CAP,C 820PF-J-50V			
C541	ECUX1H392K BX	CAP,C .0039μF-K-50V			
C542	ECUX1H392K BX	CAP,C .0039μF-K-50V			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
C612	ECA1HMR22	CAP,E .22μF/50V	C959	ECKD2H472MD	CAP,C .0047μF-M-500V
C614	ECUX1H104ZFX	CAP,C .1μF-Z-50V	C961	ECA2AM100	CAP,E 10μF-100V
C615	ECUX1H330JCX	CAP,C 33PF-J-50V	C962	ECKD2H472MD	CAP,C .0047μF-M-500V
C616	TCUX1H103KBN	CAP,C .01μF-K-50V	C964	ECA0JM101	CAP,E 100μF/6.3V
C617	TCUX1H103ZFN	CAP,C .01μF-Z-50V	C966	ECA0JM101	CAP,E 100μF/6.3V
C620	ECA1HMR33	CAP,E .33μF/50V	C967	ECA1CM221	CAP,E 220μF/16V
C621	ECA1HMR33	CAP,E .33μF/50V	C968	TACCX103T50V	CAP,C .01μF/50V
C622	ECUX1H331JCX	CAP,C 330PF-J-50V	C969	TACCX103T50V	CAP,C .01μF/50V
C623	ECUX1H331JCX	CAP,C 330PF-J-50V	C970	ECCD2H151K	CAP,C 150PF-K-500V
C624	ECUX1H331JCX	CAP,C 330PF-J-50V	C971	TACCW151T50V	CAP,C 150PF/50V
C625	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C1551	TACMSC46-01A	CAP,C 1000PF-M-10KV CT-36SF35W CT-36XF35CW
C626	ECUX1H391JCX	CAP,C 390PF-J-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C1552	ECQM4683JZ	CAP,P .068μF-J-400V <i>CT-36SF35W CT-36XF35CW</i>
C709	ECA1HM010	CAP,E 1.0μF/50V	C1607	ECA1EM100	CAP,E 10μF/25V
C751	ECA1VM470	CAP,E 47μF/35V	C1608	ECUX1H101JCX	CAP,C 100PF-J-50V
C753	ECA1VM470	CAP,E 47μF/35V	C1609	ECUX1H101JCX	CAP,C 100PF-J-50V
C756	ECQE1395KF	CAP,P 3.9μF-K-100V	C1610	ECA1HM100	CAP,E 10μF/50V
C757	ECA1AM331	CAP,E 330μF/10V	C1801	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C801	ECKD2H472PU	CAP,C .0047μF-P-500V	C1802	ECQB1H154JF	CAP,P .15μF-J-50V
C802	ECKD2H472PU	CAP,C .0047μF-P-500V	C1803	ECEA1HKAR22	CAP,E .22μF/50V
C803	ECKD2H472PU	CAP,C .0047μF-P-500V	C1804	ECEA1HKAR22	CAP,E .22μF/50V
C804	ECKD2H472PU	CAP,C .0047μF-P-500V	C1805	ECUX1H333ZFX	CAP,C .033μF-Z-50V
C805	EC0S2DA561BB	CAP,E 560PF-200V	C1806	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C806	EC0S2DA561BB	CAP,E 560PF-200V	C1807	ECEA1CKA470	CAP,E 47μF/16V
C807	ECA1HM3R3	CAP,E 3.3μF/50V	C1808	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C808	ECA1CHG101B	CAP,E 100μF-16V	C1809	ECEA1CKA470	CAP,E 47μF/16V
C809	EC0S2DA331BB	CAP,E 330μF/200V	C1810	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C810	ECQU2A153MN	CAP,P .015μF-M-250VAC	C1811	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C811	ECQU2A153MN	CAP,P .015μF-M-250VAC	C1812	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C813	ECQM4103KZ	CAP,P .01μF-K-400V <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	C1813	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C815	ECA1EHG101B	CAP,E 100μF-25V	C1814	ECEA1CKA470	CAP,E 47μF/16V
C817	ECKD3A471KB	CAP,C 470PF-K-1KV	C1815	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C818	ECKD3D102KB	CAP,C .001μF-K-2KV	C1816	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C819	ECKD3A101KB	CAP,C 100PF-K-1KV	C1817	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C821	ECKD2H561KB	CAP,C 560PF-K-500V	C1818	ECEA1CKA100	CAP,E 10μF/16V
C822	ECA1VM222	CAP,E 2200μF/35V	C1819	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C823	ECEA160V33Z	CAP,E 33μF/160V	C1820	ECEA1CKA470	CAP,E 47μF/16V
C824	ECKD3A152KB	CAP,C .0015μF-K-1KV	C1821	ECUX1H150JCX	CAP,C 15PF-J-50V
C834	ECQU2A224MV	CAP,P .22μF-M-250V	C1822	ECUX1H120JCX	CAP,C 12PF-J-50V
C837	ECA1CM101	CAP,E 100μF/16V	C1823	ECUX1H680JCX	CAP,C 68PF-J-50V
C840	ECA2CM101	CAP,E 100μF-160V	C1826	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C841	ECA1EM471	CAP,E 470μF/25V	C1827	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C904	TACCX103T50V	CAP,C .01μF/50V	C1828	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C952	ECA1CM100	CAP,E 10μF/16V	C1829	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C953	TACCX103T50V	CAP,C .01μF/50V	C1830	ECUX1H560JCX	CAP,C 56PF-J-50V
C954	TACCX103T50V	CAP,C .01μF/50V	C1831	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C958	ECA2CM100	CAP,E 10μF-160V	C1832	ECUX1H104ZFX	CAP,C .1μF-Z-50V
			C1833	ECUX1H104ZFX	CAP,C .1μF-Z-50V
			C1835	ECEA1CKA100	CAP,E 10μF/16V
			C1836	ECUX1H680JCX	CAP,C 68PF-J-50V

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
C1837	ECUX1H104ZFX	CAP,C .1μF-Z-50V	C2206	ECEA1EKA4R7	CAP,E 4.7μF/25V
C1839	ECUX1H680JCX	CAP,C 68PF-J-50V	C2207	ECEA1EKA4R7	CAP,E 4.7μF/25V
C1840	ECUX1H680JCX	CAP,C 68PF-J-50V	C2208	ECEA1EKA4R7	CAP,E 4.7μF/25V
C2101	ECA1AM101	CAP,E 100μF/10V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2210	ECEA1HKAR33	CAP,E .33μF/50V
C2105	ECA0JM101	CAP,E 100μF/6.3V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2211	ECEA1HUR68	CAP,E .68μF/50V
C2106	ECA1HM4R7	CAP,E 4.7μF/50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2212	ECA1HM2R2	CAP,E 2.2μF/50V
C2108	ECA0JM101	CAP,E 100μF/6.3V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2213	ECEA1HKA100	CAP,E 10μF/50V
C2109	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2214	ECQB1H104JF	CAP,P .1μF-J-50V
C2111	ECA1HHGR22B	CAP,E .22μF-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2215	ECQB1H223JF	CAP,P .022μF-J-50V
C2115	ECA1HM100	CAP,E 10μF/50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2216	ECUX1H332KBX	CAP,C .0033μF-K-50V
C2116	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2219	AP106K016CAE	CAP,T 10μF/16V
C2117	ECUX1H270JCX	CAP,C 27PF-J-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2220	ECEA1CKA100	CAP,E 10μF/16V
C2118	ECUX1H330JCX	CAP,C 33PF-J-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2221	ECUX1H101JCX	CAP,C 100PF-J-50V
C2119	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2222	ECUX1H472KBX	CAP,C .0047μF-K-50V
C2120	ECA1HHGR47B	CAP,E .47μF-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2223	TCUX1H103KBN	CAP,C .01μF-K-50V
C2121	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2231	ECEA1CKA101	CAP,E 100μF/16V
C2123	ECUX1H270JCX	CAP,C 27PF-J-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2232	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C2124	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2301	ECA1EM101	CAP,E 100μF/25V
C2126	ECA1HMR22	CAP,E .22μF/50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2302	ECA1HM010	CAP,E 1.0μF/50V
C2130	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	C2305	ECA1HM010	CAP,E 1.0μF/50V
C2201	AP335K016CAE	CAP,T 3.3μF/16V	C2306	ECA1EM101	CAP,E 100μF/25V
C2202	ECEA1EKA4R7	CAP,E 4.7μF/25V	C2307	ECA1EM102	CAP,E 1000μF/25V
C2203	ECEA1HKA010	CAP,E 1.0μF/50V	C2308	ECA1HM330	CAP,E 33μF/50V
C2204	ECEA1EKA4R7	CAP,E 4.7μF/25V	C2309	ECQB1H104JF	CAP,P .1μF-J-50V
C2205	ECEA1EKA4R7	CAP,E 4.7μF/25V	C2310	ECQB1H104JF	CAP,P .1μF-J-50V
			C2311	ECA1EM100	CAP,E 10μF/25V
			C2312	ECA1EM102	CAP,E 1000μF/25V
			C2313	ECA1VM102	CAP,E 1000μF/35V
			C2314	ECA1CM101	CAP,E 100μF/16V
			C2331	ECA1HM010	CAP,E 1.0μF/50V
			C2332	ECA1HM010	CAP,E 1.0μF/50V
			C2333	ECA1EM100	CAP,E 10μF/25V
			C2334	ECA1EM100	CAP,E 10μF/25V
			C2335	ECA1HM010	CAP,E 1.0μF/50V
			C2336	ECA1HM010	CAP,E 1.0μF/50V
			C2337	ECA1CM470	CAP,E 47μF/16V
			C2351	ECUX1E473KBX	CAP,C .047μF-K-25V
			C2352	ECUX1E473KBX	CAP,C .047μF-K-25V
			C2353	ECA1HM100	CAP,E 10μF/50V
			C2354	EEANA1E100B	CAP,E 10μF-25V
			C2355	ECA1HM100	CAP,E 10μF/50V
			C2356	ECA1HM100	CAP,E 10μF/50V
			C2357	ECA1HM100	CAP,E 10μF/50V
			C2358	ECUX1H153KBX	CAP,C .015μF-K-50V
			C2359	ECA1HM0R1	CAP,E 0.1μF/50V
			C2360	ECA1HM100	CAP,E 10μF/50V
			C2361	ECA1HM100	CAP,E 10μF/50V
			C2362	ECEA1CN100U	CAP,E 10μF-16V <i>CT-27SF25W CT-27XF25CW</i>
			C2364	ECA1HM100	CAP,E 10μF/50V
			C2365	ECA1HM100	CAP,E 10μF/50V

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION
C2366	ECUX1H153KBX	CAP,C .015μF-K-50V
C2367	ECA1HM0R1	CAP,E 0.1μF/50V
C2368	ECA1HMR47	CAP,E .47μF/50V
C2369	ECA1AM101	CAP,E 100μF/10V
C2373	TCUX1H103KBN	CAP,C .01μF-K-50V
C2374	ECA1HM100	CAP,E 10μF/50V
C2375	ECEA1CN220U	CAP,E 22μF-16V
C2380	EEANA1E100B	CAP,E 10μF-25V
C2382	ECA1AM101	CAP,E 100μF/10V
C2388	ECUX1C104KBX	CAP,C .1μF-K-16V
C3001	ECA1CM471	CAP,E 470μF/16V
C3002	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C3003	EEANA1E1R0B	CAP,E 1.0μF-25V
C3004	ECEA1CKA470	CAP,E 47μF/16V
C3006	ECEA1CKA100	CAP,E 10μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3007	ECEA1CKA100	CAP,E 10μF/16V
C3008	ECEA1HKA010	CAP,E 1.0μF/50V
C3009	ECEA1HKA010	CAP,E 1.0μF/50V
C3051	ECEA1CKA220	CAP,E 22μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3052	TCUX1H103ZFN	CAP,C .01μF-Z-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3053	ECEA1CKA470	CAP,E 47μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3054	ECA1CM471	CAP,E 470μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3071	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C3072	ECEA1CKA100	CAP,E 10μF/16V
C3073	ECEA1CKA100	CAP,E 10μF/16V
C3074	ECEA1HKA010	CAP,E 1.0μF/50V
C3075	ECEA1HKA010	CAP,E 1.0μF/50V
C3076	TCUX1H103ZFN	CAP,C .01μF-Z-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3077	ECEA1CKA100	CAP,E 10μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3078	ECEA1CKA100	CAP,E 10μF/16V
C3079	ECEA1HKA010	CAP,E 1.0μF/50V
C3080	ECEA1HKA010	CAP,E 1.0μF/50V
C3083	ECEA1CKA100	CAP,E 10μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3084	ECEA1HKA010	CAP,E 1.0μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3085	ECEA1HKA010	CAP,E 1.0μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW

REF NO.	PART NO.	DESCRIPTION
C3151	ECA1HM100	CAP,E 10μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3152	TCUX1H103KBN	CAP,C .01μF-K-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3153	ECA1HM100	CAP,E 10μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3154	ECA1HM010	CAP,E 1.0μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3155	ECA1HM010	CAP,E 1.0μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C3191	ECEA1CN100U	CAP,E 10μF-16V CT-27SF25W CT-27XF25CW
C3192	ECA1HM010	CAP,E 1.0μF/50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C4301	ECKF1H103ZF	CAP,C .01μF-Z-50V
C4302	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C4303	ECUX1H101JCX	CAP,C 100PF-J-50V
C4304	ECEA1CKA100	CAP,E 10μF/16V
C4307	ECEA1CKN100	CAP,E 10μF/16V
C4313	ECUX1H561KBX	CAP,C 560PF-K-50V
C4314	ECEA1HKAR47	CAP,E .47μF/50V
C4315	ECUX1H152KBX	CAP,C .0015μF-K-50V
C4316	ECEA0JKA331	CAP,E 330μF/6.3V
C4317	TCUX1H103ZFN	CAP,C .01μF-Z-50V
C4319	ECUX1H391JCX	CAP,C 390PF-J-50V
C6501	ECEA0JKA101	CAP,E 100μF/6.3V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C6501	ECEA1CKA101	CAP,E 100μF/16V CT-27SF25W CT-27XF25CW
C6502	ECUX1H104ZFX	CAP,C .1μF-Z-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C6502	TCUX1H103ZFN	CAP,C .01μF-Z-50V CT-27SF25W CT-27XF25CW
C6503	ECEA1CKA470	CAP,E 47μF/16V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C6503	TCUX1H103KBN	CAP,C .01μF-K-50V CT-27SF25W CT-27XF25CW
C6504	ECUX1H104ZFX	CAP,C .1μF-Z-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C6504	ECUX1H270JCX	CAP,C 27PF-J-50V CT-27SF25W CT-27XF25CW
C6505	ECUX1H150JCX	CAP,C 15PF-J-50V CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
C6505	ECUX1H270JCX	CAP,C 27PF-J-50V CT-27SF25W CT-27XF25CW

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
C6506	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6519	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6506	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6520	ECEA1CKA100	CAP,E 10μF/16V
C6507	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6521	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6507	ECUX1H680JCX	CAP,C 68PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6521	ECEA1HN4R7U	CAP,E 4.7μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6508	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6522	ECUX1H221KBX	CAP,C 220PF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6508	ECUX1H330JCX	CAP,C 33PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6522	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6509	ECUX1H121JCX	CAP,C 120PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6523	ECUX1H104ZFX	CAP,C .1μF-Z-50V
C6509	ECUX1H270JCX	CAP,C 27PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6524	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6510	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6524	ECEA1HKA010	CAP,E 1.0μF/50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6511	ECEA1HKA010	CAP,E 1.0μF/50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6525	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6511	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6525	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6512	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6526	ECEA1CKA100	CAP,E 10μF/16V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6513	ECUX1H120JCX	CAP,C 12PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6526	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6513	ECUX1H270JCX	CAP,C 27PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6527	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6514	ECEA1HKA3R3	CAP,E 3.3μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6527	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6514	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6528	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6515	ECUX1H330JCX	CAP,C 33PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6528	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6515	ECUX1H820JCX	CAP,C 82PF-J-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6529	ECEA1CKA100	CAP,E 10μF/16V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6516	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6529	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6516	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6530	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6517	ECEA1HN010U	CAP,E 1μF/50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6531	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6517	ECEA1HN3R3U	CAP,E 3.3μF-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6531	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
C6518	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>	C6532	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6519	ECUX1H101JCX	CAP,C 100PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6532	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF25W</i> <i>CT-27XF25CW</i>

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
C6533	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6554	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6534	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6555	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6535	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6556	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6536	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6557	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6537	ECEA1HKA010	CAP,E 1.0μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6558	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6538	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6559	EEANA1E100B	CAP,E 10μF-25V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6539	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6560	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6540	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6561	ECUX1H121JCX	CAP,C 120PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6541	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6562	ECUX1H391JCX	CAP,C 390PF-J-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6542	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6563	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6543	TCUX1H103KBN	CAP,C .01μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6580	ECA1HM100	CAP,E 10μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6544	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	C6581	ECA1CM101	CAP,E 100μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
C6545	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	DIODES		
C6546	ECEA1CKA470	CAP,E 47μF/16V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D002	MA165	DIODE
C6547	ECUX1H222KBX	CAP,C .0022μF-K-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D004	MA4330H	DIODE
C6548	ECEA1HKA010	CAP,E 1.0μF/50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D005	MA4056M	DIODE
C6549	TCUX1H103ZFN	CAP,C .01μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D011	MA165	DIODE
C6551	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D014	MA4051M	DIODE <i>CT-27SF25W</i> <i>CT-27XF25CW</i> <i>CT-27SF35W</i> <i>CT-27XF35CW</i>
C6552	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D015	MA4051M	DIODE <i>CT-27SF25W</i> <i>CT-27XF25CW</i> <i>CT-27SF35W</i> <i>CT-27XF35CW</i>
C6553	ECUX1H104ZFX	CAP,C .1μF-Z-50V <i>CT-27SF35W</i> <i>CT-27XF35CW</i> <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	D097	MA165	DIODE
			D098	MA165	DIODE
			D302	MA4051M	DIODE
			D351	MA165	DIODE
			D352	MA165	DIODE
			D353	MA165	DIODE
			D354	MA165	DIODE
			D355	MA165	DIODE
			D356	MA165	DIODE
			D361	MA165	DIODE

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
D362	MA165	DIODE	D809	RU3YX-M	DIODE
D364	MA165	DIODE	D811	AU02A	DIODE
D366	MA165	DIODE	D820	AG01V0	DIODE
D367	MA4056H	DIODE, ZENER CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	D821	AG01V0	DIODE
D367	MA4056L	DIODE, ZENER CT-36SF35W CT-36XF35CW	D822	AU01Z	DIODE
D368	MA4056H	DIODE, ZENER CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	D823	RL30A	DIODE
D368	MA4056L	DIODE, ZENER CT-36SF35W CT-36XF35CW	D825	TVSSR2KL	DIODE, PROTECTION
D369	MA4056H	DIODE, ZENER CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	D830	MA4330M	DIODE
D369	MA4056L	DIODE, ZENER CT-36SF35W CT-36XF35CW	D832	MA4200M	DIODE
D455	ERA15-01	DIODE	D835	MA4110H	DIODE
D456	MA165	DIODE	D837	MA4100M	DIODE, ZENER
D501	MA165	DIODE	D838	MA165	DIODE
D530	MA4039H	DIODE, ZENER	D850	TAP107M003	THERMISTOR (PTC)
D531	ERA22-04	DIODE, ZENER	D955	MA29W-BTA	DIODE
D532	MA4062L	DIODE	D957	MA165	DIODE
D533	MA29Q-ATA	DIODE, TEMPERATURE COMP	D2102	MA4330H	DIODE CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D534	MA4047M	DIODE, ZENER CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	D2302	MA165	DIODE
D534	MA4220H	DIODE, ZENER CT-36SF35W CT-36XF35CW	D2303	MA165	DIODE
D540	MA4047M	DIODE, ZENER	D2360	MA165	DIODE
D541	MA165	DIODE	D3001	MA3110M	DIODE, ZENER
D542	MA4082M	DIODE	D3002	MA3110M	DIODE, ZENER
D543	MA165	DIODE	D3004	MA3110M	DIODE, ZENER
D551	TVSRU2N	DIODE	D3006	MA3110M	DIODE, ZENER
D552	RS3FS	DIODE	D3007	MA3110M	DIODE, ZENER
D553	TVSRU3ANV	DIODE	D3009	MA3110M	DIODE, ZENER
D554	BYD33G-143	DIODE	D3011	MA3110M	DIODE, ZENER
D555	MA165	DIODE	D3012	MA3110M	DIODE, ZENER
D556	MA4360H	DIODE, ZENER	D3014	MA3110M	DIODE, ZENER
D557	AU02	DIODE	D3071	MA3110M	DIODE, ZENER
D561	BYD33G-143	DIODE	D3072	MA3110M	DIODE, ZENER
D752	MA2270B	DIODE	D3073	MA3110M	DIODE, ZENER
D753	MA165	DIODE	D3074	MA3110M	DIODE, ZENER
D754	MA165	DIODE	D3075	MA3110M	DIODE, ZENER
D755	MA165	DIODE CT-36SF35W CT-36XF35CW	D3078	MA3110M	DIODE, ZENER
D755	MA29W-ATA	DIODE CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	D3079	MA3110M	DIODE, ZENER
D801	TVSRM10B	DIODE	D3080	MA3110M	DIODE, ZENER
D802	TVSRM10B	DIODE	D3081	MA3110M	DIODE, ZENER
D806	MA4047H	DIODE	D3082	MA3110M	DIODE, ZENER
D807	MA165	DIODE	D3151	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
			D3152	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
			D3153	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
			D3156	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
D3157	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	IC3191	MC14066BCP	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D3158	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	IC6501	MN8283	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D3191	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	IC6501	MN8284	INT CKT CT-27SF25W CT-27XF25CW
D3192	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	IC6502	TVSA0274	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D3193	MA4110M	DIODE, ZENER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	IC6504	PST9128NR	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D4301	MA3036H	DIODE	IC6505	PQ3RD13B	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
D6501	1SS355TE-17	DIODE CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	COILS		
D6502	1SS355TE-17	DIODE CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	LC6501	TAX10075	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
FUSES			LC6502	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
F551	TSF39252	FUSE	LC6503	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
F801	XBA2A00101	FUSE 6.3A 125V	LC6504	TAX10075	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
INTEGRATED CIRCUITS			LC6505	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC001	MN102L35GTA	INT CKT	LC6506	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC002	24LC08BIP	INT CKT	LC6507	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC005	PQ05RD1B	INT CKT	LC6508	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC006	MN1280R	INT CKT	LC6509	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC007	MN1280-R	INT CKT	LC6510	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC101	AN5170K	INT CKT	LC6511	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC301	AN5308NK	INT CKT	LC6512	TAX10073	FILTER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
IC451	LA7845N	INT CKT	L001	ELESN390KA	COIL, PEAKING 39UH
IC552	AN7809	INT CKT	L008	TLUABTA470K	COIL, PEAKING 47UH
IC554	AN7805	INT CKT	L010	TSKA074	FERRITE BEAD
IC751	PC817X2	INT CKT	L012	TLUABTA100K	COIL, PEAKING 10UH
IC752	PC817X2	INT CKT	L013	TLUABTA100K	COIL, PEAKING 10UH
IC801	STRF6524LF53	INT CKT			
IC802	SE139NLF4	ERROR AMP			
IC803	ON3131R	INT CKT			
IC804	TVSS1WBS20	DIODE, BRIDGE RECTIFIER			
IC806	ON3131R	INT CKT			
IC1601	TC4066BP	INT CKT			
IC1801	M65617SP	INT CKT			
IC2101	AN5170K	INT CKT CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW			
IC2201	AN5819K	INT CKT			
IC2301	AN5275	INT CKT			
IC2331	BA15218N	INT CKT			
IC2351	AN7396K	INT CKT			
IC3001	CXA2079Q	INT CKT			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
L015	TLUABTA100K	COIL, PEAKING 10UH	L2104	ELESN330JA	COIL, PEAKING 33UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L016	TLUABTA100K	COIL, PEAKING 10UH	L2105	ELESN1R2KA	COIL, PEAKING 1.2UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L017	TSKA074	FERRITE BEAD	L2106	ELESN560JA	COIL, PEAKING 56UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L103	ELESN150JA	COIL, PEAKING 15UH	L2107	ELESN1R2KA	COIL, PEAKING 1.2UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L105	EIV7EN053B	COIL, VCO	L2109	EIV7EN053B	COIL, VCO <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L135	ELESN560JA	COIL, PEAKING 56UH	L2201	ELESN102JA	COIL, PEAKING 1000UH
L140	ELESN330JA	COIL, PEAKING 33UH	L2202	ELESN471JA	COIL, PEAKING 470UH
L355	ELESN390KA	COIL, PEAKING 39UH	L2302	TSKA074	FERRITE BEAD
L356	ELESN390KA	COIL, PEAKING 39UH	L4301	ELESN3R9KA	COIL, PEAKING 3.9UH
L357	ELESN270KA	COIL, PEAKING 27UH	L6501	ELESN4R7JA	COIL, PEAKING 4.7UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L358	ELESN270KA	COIL, PEAKING 27UH	L6502	ELESN100JA	COIL, PEAKING 10UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L359	ELESN180KA	COIL, PEAKING 18UH	L6502	ELESN330JA	COIL, PEAKING 33UH <i>CT-27SF25W CT-27XF25CW</i>
L360	ELESN100KA	COIL, PEAKING 10UH	L6503	ELESN330JA	COIL, PEAKING 33UH
L551	ELH5L7110	COIL, HORIZ LINEARITY <i>CT-36SF35W CT-36XF35CW</i>	L6504	ELESN330JA	COIL, PEAKING 33UH <i>CT-27SF25W CT-27XF25CW</i>
L551	TLH6626P	COIL, LINEARITY <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	L6505	ELESN220JA	COIL, PEAKING 22UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L554	TSKA072	FERRITE BEAD	L6505	ELESN330JA	COIL, PEAKING 33UH <i>CT-27SF25W CT-27XF25CW</i>
L556	TSKA072	FERRITE BEAD	L6506	ELESN150JA	COIL, PEAKING 15UH <i>CT-27SF25W CT-27XF25CW</i>
L557	TSKA072	FERRITE BEAD	L6507	ELESN120JA	COIL, PEAKING 12UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L601	ELESN820KA	COIL, PEAKING 82UH	L6507	ELESN150KA	COIL, PEAKING 15UH <i>CT-27SF25W CT-27XF25CW</i>
L602	ELESN4R7JA	COIL, PEAKING 4.7UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	L6508	ELESN2R2KA	COIL, PEAKING 2.2UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L751	TLH15733M	COIL, TOP/BOTTOM PHASING	L6510	ELESN2R2KA	COIL, PEAKING 2.2UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L801	ELF18D850C	LINE FILTER	L6511	ELESN150JA	COIL, PEAKING 15UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L802	ELF18D850C	LINE FILTER	TRANSISTORS		
L804	TSKA076	FERRITE BEAD	Q001	JC501PQ	TRANSISTOR
L805	ELC08D470F	LINE FILTER	Q014	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
L806	TSKA074	FERRITE BEAD	Q015	2SD601ARTX	TRANSISTOR
L808	TSKA074	FERRITE BEAD	Q102	2SD601ARTX	TRANSISTOR
L810	TSKA074	FERRITE BEAD			
L811	TSKA074	FERRITE BEAD			
L812	TSKA076	FERRITE BEAD			
L813	TSKA074	FERRITE BEAD			
L953	TSKA074	FERRITE BEAD			
L954	TSKA074	FERRITE BEAD			
L958	TSKA074	FERRITE BEAD			
L1551	ELC08D101E	CHOKE COIL, 100UH <i>CT-36SF35W CT-36XF35CW</i>			
L1801	ELESN1R5KA	COIL, PEAKING 1.5UH			
L1803	ELESN2R2K	COIL, PEAKING 2.2UH			
L1804	ELESN150KA	COIL, PEAKING 15UH			
L1806	ELESN1R0KA	COIL, PEAKING 1.0UH			
L1807	ELESN1R0KA	COIL, PEAKING 1.0UH			
L1808	EXCELDR25	COIL			
L2102	ELESN100KA	COIL, PEAKING 10UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>			
L2103	ELESN150JA	COIL, PEAKING 15UH <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>			

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REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
Q140	2SD601ARTX	TRANSISTOR	Q956	2SD2400AF51E	TRANSISTOR
Q141	2SD601ARTX	TRANSISTOR	Q961	JC501PQ	TRANSISTOR
Q142	2SB709ARTX	TRANSISTOR	Q962	JA101PQ	TRANSISTOR
Q301	2SB709ARTX	TRANSISTOR	Q1601	2SD601ARTX	TRANSISTOR
Q303	2SB709ARTX	TRANSISTOR	Q1602	2SD601ARTX	TRANSISTOR
Q304	2SD601ARTX	TRANSISTOR	Q1801	2SD601ARTX	TRANSISTOR
Q305	2SD601ARTX	TRANSISTOR	Q1802	2SD601ARTX	TRANSISTOR
Q306	2SD601ARTX	TRANSISTOR	Q1803	2SD601ARTX	TRANSISTOR
Q308	2SB709ARTX	TRANSISTOR	Q1804	2SB709ARTX	TRANSISTOR
Q309	2SD601ARTX	TRANSISTOR	Q1805	2SB709ARTX	TRANSISTOR
Q310	2SD601ARTX	TRANSISTOR	Q1871	2SB709ARTX	TRANSISTOR
Q351	2SC3063	TRANSISTOR	Q2101	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q352	2SC3063	TRANSISTOR	Q2301	2SB709ARTX	TRANSISTOR
Q353	2SC3063	TRANSISTOR	Q2302	2SD601ARTX	TRANSISTOR
Q354	JC501PQ	TRANSISTOR	Q2331	2SD601ARTX	TRANSISTOR
Q355	JC501PQ	TRANSISTOR	Q2332	2SB709ARTX	TRANSISTOR
Q356	JC501PQ	TRANSISTOR	Q2333	2SD601ARTX	TRANSISTOR
Q357	2SC3063	TRANSISTOR	Q2334	2SD601ARTX	TRANSISTOR
Q358	2SC3063	TRANSISTOR	Q2335	2SB709ARTX	TRANSISTOR
Q359	2SC3063	TRANSISTOR	Q3031	2SB709ARTX	TRANSISTOR
Q360	2SB1011	TRANSISTOR	Q3032	2SD601ARTX	TRANSISTOR
Q361	2SB1011	TRANSISTOR	Q3033	2SD601ARTX	TRANSISTOR
Q362	2SB1011	TRANSISTOR	Q3051	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q363	JA101PQ	TRANSISTOR	Q3052	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q451	JA101PQ	TRANSISTOR	Q3053	2SB709ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q501	2SC4212H	TRANSISTOR	Q3191	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q502	2SD601ARTX	TRANSISTOR	Q3192	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q503	2SD601ARTX	TRANSISTOR	Q4309	2SB709ARTX	TRANSISTOR
Q504	2SD601ARTX	TRANSISTOR	Q4310	2SD601ARTX	TRANSISTOR
Q505	2SD601ARTX	TRANSISTOR	Q4311	2SB709ARTX	TRANSISTOR
Q551	2SD2539306	TRANSISTOR	Q4312	2SD601ARTX	TRANSISTOR
Q560	JA101PQ	TRANSISTOR	Q4313	2SD601ARTX	TRANSISTOR
Q602	2SB709ARTX	TRANSISTOR	Q4315	2SC1384Q	TRANSISTOR
Q603	2SB709ARTX	TRANSISTOR	Q6501	2SD601ARTX	TRANSISTOR
Q604	2SD601ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>	Q6502	2SD601ARTX	TRANSISTOR
Q751	JC501PQ	TRANSISTOR	Q6503	2SB709ARTX	TRANSISTOR <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
Q752	JA101PQ	TRANSISTOR	Q6503	2SD601ARTX	TRANSISTOR <i>CT-27SF25W</i> <i>CT-27XF25CW</i>
Q753	2SD1267AP	TRANSISTOR	Q6504	2SD601ARTX	TRANSISTOR
Q754	JA101PQ	TRANSISTOR	Q6505	2SD601ARTX	TRANSISTOR
Q755	JC501PQ	TRANSISTOR			
Q756	JC501PQ	TRANSISTOR			
Q757	JA101PQ	TRANSISTOR			
Q758	JA101PQ	TRANSISTOR			
Q803	2SC1383NC	TRANSISTOR			
Q804	2SA1767Q	TRANSISTOR			
Q952	JC501PQ	TRANSISTOR			
Q953	JC501PQ	TRANSISTOR			
Q954	JA101PQ	TRANSISTOR			
Q955	2SB1569AF51E	TRANSISTOR			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
Q6506	2SD601ARTX	TRANSISTOR	R020	ERJ6GEYJ471	RES,M 470-J-1/10
Q6507	2SD601ARTX	TRANSISTOR	R021	ERDS2TJ562	RES,C 5.6K-J-1/4
Q6508	2SD601ARTX	TRANSISTOR	R022	ERJ6GEYJ102	RES,M 1K-J-1/10
Q6509	2SB709ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R026	ERJ6GEYJ101	RES,M 100-J-1/10
Q6509	2SD601ARTX	TRANSISTOR <i>CT-27SF25W CT-27XF25CW</i>	R028	ERDS2TJ101	RES,C 100-J-1/4
Q6510	2SB709ARTX	TRANSISTOR <i>CT-27SF25W CT-27XF25CW</i>	R032	ER0S2CKF1002	RES,M 10K-F-1/4
Q6510	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R033	ERDS2TJ222	RES,C 2.2K-J-1/4
Q6511	2SB709ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R034	ERDS2TJ222	RES,C 2.2K-J-1/4
Q6511	2SD601ARTX	TRANSISTOR <i>CT-27SF25W CT-27XF25CW</i>	R035	ERDS2TJ332	RES,C 3.3K-J-1/4
Q6512	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R036	ERDS2TJ512	RES,C 5.1K-J-1/4
Q6513	2SD601ARTX	TRANSISTOR <i>CT-27SF25W CT-27XF25CW</i>	R037	ERDS2TJ912	RES,C 9.1K-J-1/4
Q6514	2SB709ARTX	TRANSISTOR <i>CT-27SF25W CT-27XF25CW</i>	R038	ERDS2TJ223	RES,C 22K-J-1/4
Q6514	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R039	ERDS2TJ102	RES,C 1K-J-1/4
Q6515	2SB709ARTX	TRANSISTOR	R040	ERJ6ENF1200	RES,M 120-F-1/10W
Q6516	2SB709ARTX	TRANSISTOR	R041	ERJ6ENF1201	RES,M 1.2K-F-1/10
Q6517	2SD601ARTX	TRANSISTOR	R042	ERDS2TJ102	RES,C 1K-J-1/4
Q6518	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R043	ERJ6GEYJ682	RES,M 6.8K-J-1/10
Q6519	2SD601ARTX	TRANSISTOR	R044	ERJ6GEYJ151	RES,M 150-J-1/10
Q6520	2SD601ARTX	TRANSISTOR <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R045	ERDS2TJ102	RES,C 1K-J-1/4
RELAYS			R047	ERJ6GEYJ102	RES,M 1K-J-1/10
RL801	TSEH0005	RELAY	R048	ERJ6GEYJ102	RES,M 1K-J-1/10
RESISTORS			R050	ERJ6GEYJ103	RES,M 10K-J-1/10
R008	ERJ6GEYJ102	RES,M 1K-J-1/10	R052	ERDS2TJ101	RES,C 100-J-1/4
R009	ERDS2TJ562	RES,C 5.6K-J-1/4	R053	ERDS2TJ101	RES,C 100-J-1/4
R010	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R055	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R011	ERJ6GEYJ103	RES,M 10K-J-1/10	R056	ERDS2TJ272	RES,C 2.7K-J-1/4
R012	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R057	ERDS2TJ272	RES,C 2.7K-J-1/4
R013	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R058	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R014	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R059	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R015	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R060	ERJ6GEYJ102	RES,M 1K-J-1/10
R016	ERJ6GEYJ103	RES,M 10K-J-1/10	R061	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R017	ERJ6GEYJ103	RES,M 10K-J-1/10	R062	ERDS2TJ101	RES,C 100-J-1/4
R018	ERJ6GEYJ103	RES,M 10K-J-1/10	R064	ERJ6ENF1200	RES,M 120-F-1/10W
R019	ERJ6GEYJ103	RES,M 10K-J-1/10	R066	ERJ6ENF1200	RES,M 120-F-1/10W
			R068	ERDS2TJ103	RES,C 10K-J-1/4
			R079	ERJ6GEYJ221	RES,M 220-J-1/10
			R080	ERJ6GEYJ471	RES,M 470-J-1/10
			R081	ERJ6GEYJ220	RES,M 22-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
			R082	ERJ6ENF1601	RES,M 1.6K-F-1/10W
			R083	ERJ6ENF6800	RES,M 680-F-1/10
			R085	ERJ6GEYJ392	RES,M 3.9K-J-1/10
			R086	ERJ6GEYJ103	RES,M 10K-J-1/10
			R087	ERJ6GEYJ471	RES,M 470-J-1/10
			R088	ERJ6GEYJ331	RES,M 330-J-1/10
			R089	ERDS2TJ102	RES,C 1K-J-1/4
			R091	ERJ6GEYJ472	RES,M 4.7K-J-1/10

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R102	ERJ6GEYJ102	RES,M 1K-J-1/10	R332	ERDS2TJ222	RES,C 2.2K-J-1/4
R103	ERJ6GEYJ102	RES,M 1K-J-1/10	R334	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R112	ERJ6GEYJ102	RES,M 1K-J-1/10	R335	ERJ6GEYJ564	RES,M 560K-J-1/10
R113	ERJ6GEYJ221	RES,M 220-J-1/10	R336	ERJ6GEYJ684	RES,M 680K-J-1/10
R114	ERJ6GEYJ332	RES,M 3.3K-J-1/10	R338	ERG1SJ390P	RES,M 39-J-1W
R115	EVND2AA03B33	CONTROL 3K	R340	ERJ6GEYJ223	RES,M 22K-J-1/10
R117	ERJ6GEYJ101	RES,M 100-J-1/10	R348	ERJ6ENF5600	RES,M 560-F-1/10W
R118	ERJ6GEYJ331	RES,M 330-J-1/10	R350	ERJ6ENF6800	RES,M 680-F-1/10
R119	ERJ6GEYJ152	RES,M 1.5K-J-1/10	R351	ERDS2TJ151	RES,C 150-J-1/4
R121	ERJ6GEYJ121	RES,M 120-J-1/10	R352	ERDS2TJ151	RES,C 150-J-1/4
R125	ERJ6GEYJ331	RES,M 330-J-1/10	R353	ERDS2TJ151	RES,C 150-J-1/4
R126	ERJ6GEYJ183	RES,M 18K-J-1/10	R354	ERDS2TJ101	RES,C 100-J-1/4
R128	ERJ6GEYJ683	RES,M 68K-J-1/10	R355	ERDS2TJ101	RES,C 100-J-1/4
R129	ERJ6GEYJ103	RES,M 10K-J-1/10	R356	ERDS2TJ101	RES,C 100-J-1/4
R135	ERJ6GEYJ331	RES,M 330-J-1/10	R357	ERDS2TJ101	RES,C 100-J-1/4
R140	ERJ6GEYJ102	RES,M 1K-J-1/10	R358	ERDS2TJ101	RES,C 100-J-1/4
R141	ERJ6GEYJ471	RES,M 470-J-1/10	R359	ERDS2TJ101	RES,C 100-J-1/4
R142	ERJ6GEYJ102	RES,M 1K-J-1/10	R360	ERDS2TJ151	RES,C 150-J-1/4
R143	ERJ6GEYJ103	RES,M 10K-J-1/10	R363	ERDS2TJ151	RES,C 150-J-1/4
R144	ERJ6GEYJ103	RES,M 10K-J-1/10	R364	ERDS2TJ151	RES,C 150-J-1/4
R145	ERJ6GEYJ471	RES,M 470-J-1/10	R367	ERDS2TJ221	RES,C 220-J-1/4
R146	ERJ6GEYJ471	RES,M 470-J-1/10	R368	ERDS2TJ221	RES,C 220-J-1/4
R151	ERJ6GEYJ473	RES,M 47K-J-1/10	R369	ERDS2TJ221	RES,C 220-J-1/4
R152	ERJ6GEYJ473	RES,M 47K-J-1/10	R370	ERDS2TJ101	RES,C 100-J-1/4
R202	ERJ6GEYJ221	RES,M 220-J-1/10	R371	ERDS2TJ561	RES,C 560-J-1/4 <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
R301	ERJ6GEYJ562	RES,M 5.6K-J-1/10	R371	ERDS2TJ821	RES,C 820-J-1/4 <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>
R302	ERJ6GEYJ102	RES,M 1K-J-1/10	R372	ERDS2TJ561	RES,C 560-J-1/4 <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
R303	ERJ6GEYJ103	RES,M 10K-J-1/10	R372	ERDS2TJ821	RES,C 820-J-1/4 <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>
R304	ERJ6ENF1651	RES,M 1.65K-F-1/10	R373	ERDS2TJ561	RES,C 560-J-1/4 <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
R305	ERJ6GEYJ473	RES,M 47K-J-1/10	R373	ERDS2TJ821	RES,C 820-J-1/4 <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>
R306	ERJ6GEYJ823	RES,M 82K-J-1/10	R374	ERG2SJS223H	RES,M 22K-J-2W
R307	ERJ6GEYJ333	RES,M 33K-J-1/10	R375	ERG2SJS223H	RES,M 22K-J-2W
R308	ERJ6GEYJ221	RES,M 220-J-1/10	R376	ERG2SJS223H	RES,M 22K-J-2W
R309	ERJ6GEYJ274	RES,M 270K-J-1/10	R377	ERG2SJS223H	RES,M 22K-J-2W
R310	ERJ6GEYJ102	RES,M 1K-J-1/10	R378	ERG2SJS223H	RES,M 22K-J-2W
R311	ERJ6GEYJ471	RES,M 470-J-1/10	R379	ERG2SJS223H	RES,M 22K-J-2W
R313	ERJ6GEYJ102	RES,M 1K-J-1/10	R380	ERDS2TJ330	RES,C 33-J-1/4
R314	ERJ6GEYJ102	RES,M 1K-J-1/10	R381	ERDS2TJ330	RES,C 33-J-1/4
R315	ERJ6GEYJ103	RES,M 10K-J-1/10	R382	ERDS2TJ330	RES,C 33-J-1/4
R316	ERJ6GEYJ471	RES,M 470-J-1/10	R383	ERDS2TJ330	RES,C 33-J-1/4
R317	ERJ6GEYJ123	RES,M 12K-J-1/10	R384	ERDS2TJ330	RES,C 33-J-1/4
R318	ERJ6GEYJ272	RES,M 2.7K-J-1/10	R385	ERDS2TJ330	RES,C 33-J-1/4
R319	ERJ6GEYJ332	RES,M 3.3K-J-1/10	R386	ERDS2TJ752	RES,C 7.5K-J-1/4
R325	ERJ6ENF5601	RES,M 5.6K-F-1/10	R387	ERDS2TJ752	RES,C 7.5K-J-1/4
R327	ERJ6ENF2201	RES,M 2.2K-F-1/10 <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>			
R327	ERJ6ENF2701	RES,M 2.7K-F-1/10 <i>CT-36SF35W</i> <i>CT-36XF35CW</i>			
R330	ERDS2TJ471	RES,C 470-J-1/4			
R331	ERJ6GEYJ102	RES,M 1K-J-1/10			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R388	ERDS2TJ752	RES,C 7.5K-J-1/4	R515	ERG3FJ242H	RES,M 2.4K-J-3W CT-36SF35W CT-36XF35CW
R389	ERD25FJ102	RES,C 1K-J-1/4	R515	ERG3FJ392H	RES,M 3.9K-J-3W CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
R390	ERD25FJ102	RES,C 1K-J-1/4	R516	ERG3FJ242H	RES,M 2.4K-J-3W CT-36SF35W CT-36XF35CW
R391	ERD25FJ102	RES,C 1K-J-1/4	R516	ERG3FJ392H	RES,M 3.9K-J-3W CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
R392	ERDS1TJ561	RES,C 560-J-1/2	R517	ERG2FJ392H	RES,M 3.9K-J-2W
R393	ERQ12AJ101	RES,F 100-J-1/2	R520	ERDS2TJ221	RES,C 220-J-1/4
R395	ERDS1TJ394	RES,C 390K-J-1/2	R524	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R396	ERC12ZGK825	RES,S 8.2MEG-K-1/2 CT-36SF35W CT-36XF35CW	R525	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R397	ERC12ZGK825	RES,S 8.2MEG-K-1/2 CT-36SF35W CT-36XF35CW	R527	ERDS2TJ821	RES,C 820-J-1/4
R399	ERC12ZGK825	RES,S 8.2MEG-K-1/2 CT-36SF35W CT-36XF35CW	R531	ERD25FJ470	RES,C 47-J-1/4
R401	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R532	ERJ6ENF2432	RES,M 24.3K-F-1/10
R405	ERDS2TJ102	RES,C 1K-J-1/4	R533	ERJ6ENF2671	RES,M 2.67K-F-1/10W CT-36SF35W CT-36XF35CW
R408	ERJ6GEYJ333	RES,M 33K-J-1/10	R533	ERJ6ENF2741	RES,M 2.74K-F-1/10W CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
R451	ERDS2TJ123	RES,C 12K-J-1/4	R534	ERJ6GEYJ561	RES,M 560-J-1/10
R452	ERDS1FJ1R8	RES,C 1.8-J-1/2	R535	ERJ6GEYJ561	RES,M 560-J-1/10
R453	ERDS2TJ123	RES,C 12K-J-1/4	R536	ERDS1TJ274	RES,C 270K-J-1/2
R454	ERDS2TJ473	RES,C 47K-J-1/4	R537	ERJ6GEYJ103	RES,M 10K-J-1/10
R455	ERDS2TJ103	RES,C 10K-J-1/4	R540	ERJ6GEYJ103	RES,M 10K-J-1/10
R456	ERG1SJ151P	RES,M 150-J-1W CT-36SF35W CT-36XF35CW	R541	ERJ6GEYJ102	RES,M 1K-J-1/10
R456	ERG1SJ331P	RES,M 330-J-1W CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	R542	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R457	ERDS1FJ1R5	RES,C 1.5-J-1/2	R543	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R458	ERDS1FJ1R8	RES,C 1.8-J-1/2 CT-36SF35W CT-36XF35CW	R544	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R458	ERDS1FJ2R7	RES,C 2.7-J-1/2 CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	R545	ERJ6GEYJ334	RES,M 330K-J-1/10
R460	ERDS2TJ103	RES,C 10K-J-1/4	R546	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R461	ERDS2TJ223	RES,C 22K-J-1/4	R552	ERD25FJ1R0	RES,C 1.0-J-1/4
R468	EROS2CKF4321	RES,M 4.32K-F-1/4	R556	ERDS2TJ272	RES,C 2.7K-J-1/4
R469	EROS2CKF1471	RES,M 1.47K-F-1/4	R557	ERDS2TJ103	RES,C 10K-J-1/4
R470	ERDS2TJ102	RES,C 1K-J-1/4	R558	ERQ1CJP102	RES,F 1K-J-1W
R471	ERDS1FJ1R2	RES,C 1.2-J-1/2	R559	ERG2FJ683H	RES,M 12K-J-2W
R472	ERDS2TJ103	RES,C 10K-J-1/4	R560	ERG2FJ683H	RES,M 12K-J-2W
R473	ERDS2TJ223	RES,C 22K-J-1/4	R561	ERQ2CJ2R0	RES,F 2.0-J-2W CT-36SF35W CT-36XF35CW
R474	ERDS2TJ103	RES,C 10K-J-1/4	R561	ERQ2CJ2R4	RES,F 2.4-J-2W CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
R501	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R562	ERG2FJ561H	RES,M 560-J-2W CT-36SF35W CT-36XF35CW
R502	ERJ6GEYJ432	RES,M 4.3K-J-1/10 CT-36SF35W CT-36XF35CW	R563	ERDS2TJ563	RES,C 56K-J-1/4 CT-36SF35W CT-36XF35CW
R502	ERJ6GEYJ562	RES,M 5.6K-J-1/10 CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW	R563	ERDS2TJ683	RES,C 68K-J-1/4 CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
R503	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R564	ERDS2TJ563	RES,C 56K-J-1/4
R504	ERJ6GEYJ122	RES,M 1.2K-J-1/10	R565	ERDS2TJ103	RES,C 10K-J-1/4
R505	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-36SF35W CT-36XF35CW	R566	ERDS1FJ1R0	RES,C 1.0-J-1/2
R506	ERJ6GEYJ331	RES,M 330-J-1/10	R569	ERG3FJ180	RES,M 18-J-3W
R509	ERJ6GEYJ684	RES,M 680K-J-1/10			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R571	ERDS2TJ102	RES,C 1K-J-1/4	R771	ERDS2TJ681	RES,C 680-J-1/4
R602	ERJ6GEYJ101	RES,M 100-J-1/10	R772	ERDS2TJ332	RES,C 3.3K-J-1/4
R603	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R773	ERDS2TJ225	RES,C 2.2MEG-J-1/4
R604	ERJ6GEYJ222	RES,M 2.2K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R774	ERDS2TJ471	RES,C 470-J-1/4
R605	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R775	ERDS2TJ274	RES,C 270K-J-1/4
R606	ERJ6GEYJ392	RES,M 3.9K-J-1/10	R777	ERDS2TJ183	RES,C 18K-J-1/4
R607	ERJ6GEYJ470	RES,M 47-J-1/10	R778	ERG5ZXJ392	RES,M 3.9K-J-5W <i>CT-36SF35W CT-36XF35CW</i>
R608	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R779	ERDS2TJ182	RES,C 1.8K-J-1/4
R609	ERJ6GEYJ470	RES,M 47-J-1/10	R801	ERF7ZK1R0	RES,W 1.0-K-7W
R610	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R802	ERC12ZGM825	RES,S 8.2MEG-M-1/2
R611	ERJ6GEYJ470	RES,M 47-J-1/10	R804	ERG5FJ101	RES,M 100-J-5W
R612	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R805	ERDS2TJ274	RES,C 270K-J-1/4
R613	ERJ6GEYJ332	RES,M 3.3K-J-1/10	R806	ERDS2TJ274	RES,C 270K-J-1/4
R614	ERJ6GEYJ332	RES,M 3.3K-J-1/10	R808	ERDS1FJ1R0	RES,C 1.0-J-1/2 <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
R615	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R809	ERDS1FJ1R0	RES,C 1.0-J-1/2
R616	ERJ6GEYJ152	RES,M 1.5K-J-1/10	R810	ERDS1FJ272	RES,C 2.7K-J-1/2
R618	ERJ6GEYJ392	RES,M 3.9K-J-1/10	R812	ERDS1TJ183	RES,C 18K-J-1/2
R621	ERJ6GEYJ102	RES,M 1K-J-1/10	R813	ERDS2TJ562	RES,C 5.6K-J-1/4
R622	ERJ6GEYJ362	RES,M 3.6K-J-1/10	R816	ERDS1FJ1R0	RES,C 1.0-J-1/2 <i>CT-36SF35W CT-36XF35CW</i>
R623	ERJ6GEYJ152	RES,M 1.5K-J-1/10	R818	ERQ1CKPR22	RES,F .22-K-1W
R625	ERDS2TJ102	RES,C 1K-J-1/4	R819	ERD25FJ3R3	RES,C 3.3-J-1/4W
R626	ERJ6GEYJ333	RES,M 33K-J-1/10	R820	ERDS2TJ153	RES,C 15K-J-1/4
R639	ERJ6GEYJ220	RES,M 22-J-1/10	R821	ERDS2TJ392	RES,C 3.9K-J-1/4
R640	ERJ6GEYJ220	RES,M 22-J-1/10	R822	ERG2FJ473H	RES,M 47K-J-2W
R722	ERDS2TJ221	RES,C 220-J-1/4	R823	ERDS2TJ681	RES,C 680-J-1/4
R723	ERJ6GEYJ103	RES,M 10K-J-1/10	R824	ERDS2TJ472	RES,C 4.7K-J-1/4
R724	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R826	ERW12PKR39	RES,C .39-K-1/2W
R751	ERDS2TJ332	RES,C 3.3K-J-1/4	R827	ERW12PKR39	RES,C .39-K-1/2W
R752	ERDS2TJ471	RES,C 470-J-1/4	R829	ERDS2TJ100	RES,C 10-J-1/4
R755	ERDS2TJ103	RES,C 10K-J-1/4	R830	ERDS1TJ122	RES,C 1.2K-J-1/2
R756	ERDS2TJ123	RES,C 12K-J-1/4	R831	ERDS2TJ332	RES,C 3.3K-J-1/4
R757	ERDS2TJ682	RES,C 6.8K-J-1/4	R832	ERDS1TJ333	RES,C 33K-J-1/2
R758	ERDS2TJ182	RES,C 1.8K-J-1/4	R833	ERDS2TJ102	RES,C 1K-J-1/4
R760	ERG5ZXJ562	RES,M 5.6K-J-5W <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	R835	ERDS2TJ221	RES,C 220-J-1/4
R761	ERDS2TJ103	RES,C 10K-J-1/4	R836	ERDS2TJ332	RES,C 3.3K-J-1/4
R762	ERDS2TJ331	RES,C 330-J-1/4	R837	ERDS1FJ331	RES,C 330-J-1/2
R763	ERDS1TJ182	RES,C 1.8K-J-1/2	R839	ERDS2TJ103	RES,C 10K-J-1/4
R764	ERQ2CJP100	RES,F 10-J-2W	R918	ERDS2TJ121	RES,C 120-J-1/4
R765	ERDS2TJ471	RES,C 470-J-1/4	R952	ERDS2TJ163	RES,C 16K-J-1/4
R766	ERDS2TJ102	RES,C 1K-J-1/4	R953	ERDS2TJ332	RES,C 3.3K-J-1/4
R767	ERDS2TJ820	RES,C 82-J-1/4	R954	ERDS2TJ471	RES,C 470-J-1/4
R769	ERDS2TJ561	RES,C 560-J-1/4	R955	ERDS2TJ181	RES,C 180-J-1/4 <i>CT-36SF35W CT-36XF35CW</i>
R770	ERG3FJ103	RES,M 10K-J-3W <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	R955	ERDS2TJ390	RES,C 39-J-1/4 <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
			R960	ERQ14AJ100	RES,F 10-J-1/4
			R961	ERQ1CJP331	RES,F 330-J-1W

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R962	ERDS2TJ220	RES,C 22-J-1/4	R1830	ERJ6GEYJ102	RES,M 1K-J-1/10
R963	ERDS2TJ220	RES,C 22-J-1/4	R1856	ERJ6GEYJ153	RES,M 15K-J-1/10
R964	ERDS2TJ471	RES,C 470-J-1/4	R1871	ERJ6GEYJ103	RES,M 10K-J-1/10
R965	ERDS2TJ563	RES,C 56K-J-1/4	R1872	ERJ6GEYJ471	RES,M 470-J-1/10
R966	ERDS1FJ471	RES,C 470-J-1/2	R1873	ERJ6GEYJ102	RES,M 1K-J-1/10
R967	ERDS2TJ563	RES,C 56K-J-1/4	R1874	ERJ6GEYJ391	RES,M 390-J-1/10
R968	ERDS2TJ471	RES,C 470-J-1/4	R2106	ERDS2TJ183	RES,C 18K-J-1/4 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R969	ERDS2TJ390	RES,C 39-J-1/4	R2109	ERJ6GEYJ683	RES,M 68K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R970	ERDS2TJ2R7	RES,C 2.7-J-1/4	R2110	ERJ6GEYJ331	RES,M 330-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R971	ERDS2TJ2R7	RES,C 2.7-J-1/4	R2111	ERJ6GEYJ152	RES,M 1.5K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R972	ERDS2TJ390	RES,C 39-J-1/4	R2112	ERJ6GEYJ331	RES,M 330-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R973	ERDS2TJ101	RES,C 100-J-1/4	R2113	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R974	ERDS2TJ333	RES,C 33K-J-1/4	R2114	ERJ6GEYJ391	RES,M 390-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R987	ERDS2TJ472	RES,C 4.7K-J-1/4	R2115	EVND8AA03B33	CONTROL 3K <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R988	ERDS2TJ471	RES,C 470-J-1/4	R2117	ERJ6GEYJ121	RES,M 120-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R989	ERDS2TJ682	RES,C 6.8K-J-1/4	R2118	EVND8AA03B33	CONTROL 3K <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R990	ERDS2TJ471	RES,C 470-J-1/4	R2119	ERJ6GEYJ392	RES,M 3.9K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R991	ERDS2TJ471	RES,C 470-J-1/4	R2121	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1551	ERDS1TJ2R2	RES,C 2.2-J-1/2 <i>CT-36SF35W CT-36XF35CW</i>	R2122	ERJ6GEYJ473	RES,M 47K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1601	ERDS2TJ331	RES,C 330-J-1/4	R2123	ERJ6GEYJ473	RES,M 47K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1602	ERDS2TJ331	RES,C 330-J-1/4	R2124	ERJ6GEYJ332	RES,M 3.3K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1603	ERDS2TJ331	RES,C 330-J-1/4	R2127	ERJ6GEYJ101	RES,M 100-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1604	ERJ6GEYJ182	RES,M 1.8K-J-1/10	R2129	ERJ6GEYJ392	RES,M 3.9K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R1605	ERJ6GEYJ562	RES,M 5.6K-J-1/10	R2201	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1606	ERJ6GEYJ333	RES,M 33K-J-1/10	R2202	ERJ6GEYJ153	RES,M 15K-J-1/10
R1607	ERJ6GEYJ332	RES,M 3.3K-J-1/10			
R1608	ERJ6GEYJ333	RES,M 33K-J-1/10			
R1609	ERJ6GEYJ682	RES,M 6.8K-J-1/10			
R1801	ERJ6GEYJ301	RES,M 300-J-1/10			
R1802	ERJ6GEYJ104	RES,M 100K-J-1/10			
R1803	ERJ6GEYJ474	RES,M 470K-J-1/10			
R1804	ERJ6GEYJ202	RES,M 2K-J-1/10			
R1805	ERJ6GEYJ102	RES,M 1K-J-1/10			
R1807	ERJ6GEYJ103	RES,M 10K-J-1/10			
R1808	ERJ6GEYJ103	RES,M 10K-J-1/10			
R1809	ERJ6GEYJ473	RES,M 47K-J-1/10			
R1810	ERJ6GEYJ103	RES,M 10K-J-1/10			
R1811	ERJ6GEYJ682	RES,M 6.8K-J-1/10			
R1812	ERJ6GEYJ153	RES,M 15K-J-1/10			
R1813	ERJ6GEYJ153	RES,M 15K-J-1/10			
R1814	ERJ6GEYJ271	RES,M 270-J-1/10			
R1815	ERJ6GEYJ361	RES,M 360-J-1/10			
R1818	ERJ6GEYJ101	RES,M 100-J-1/10			
R1819	ERJ6GEYJ101	RES,M 100-J-1/10			
R1822	ERJ6GEYJ682	RES,M 6.8K-J-1/10			
R1823	ERJ6GEYJ473	RES,M 47K-J-1/10			
R1825	ERJ6GEYJ471	RES,M 470-J-1/10			
R1827	ERJ6GEYJ102	RES,M 1K-J-1/10			
R1828	ERJ6GEYJ821	RES,M 820-J-1/10			
R1829	ERJ6GEYJ102	RES,M 1K-J-1/10			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R2203	ERJ6GEYJ104	RES,M 100K-J-1/10	R3006	ERJ6GEYJ221	RES,M 220-J-1/10
R2204	ERJ6GEYJ473	RES,M 47K-J-1/10	R3007	ERJ6GEYJ102	RES,M 1K-J-1/10
R2205	ERJ6GEYJ154	RES,M 150K-J-1/10	R3008	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2208	ERJ6ENF9102	RES,M 91K-F-1/10	R3009	ERJ6GEYJ102	RES,M 1K-J-1/10
R2212	ERJ6GEYJ682	RES,M 6.8K-J-1/10	R3010	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2230	ERJ6GEYJ332	RES,M 3.3K-J-1/10	R3011	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2231	ERJ6GEYJ562	RES,M 5.6K-J-1/10	R3012	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2301	ERJ6GEYJ473	RES,M 47K-J-1/10	R3013	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2302	ERJ6GEYJ473	RES,M 47K-J-1/10	R3014	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2303	ERJ6GEYJ103	RES,M 10K-J-1/10	R3015	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2304	ERJ6GEYJ103	RES,M 10K-J-1/10	R3016	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2305	ERD25FJ2R2	RES,C 2.2-J-1/4	R3017	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2306	ERD25FJ2R2	RES,C 2.2-J-1/4	R3018	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2307	ERJ6GEYJ562	RES,M 5.6K-J-1/10	R3019	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2310	ERJ6GEYJ223	RES,M 22K-J-1/10	R3020	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2311	ERJ6GEYJ271	RES,M 270-J-1/10	R3021	ERJ6GEYJ221	RES,M 220-J-1/10
R2312	ERJ6GEYJ271	RES,M 270-J-1/10	R3022	ERJ6GEYJ221	RES,M 220-J-1/10
R2321	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R3024	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R2323	ERJ6GEYJ223	RES,M 22K-J-1/10	R3026	ERJ6GEYJ102	RES,M 1K-J-1/10
R2324	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R3027	ERJ6GEYJ221	RES,M 220-J-1/10
R2325	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R3028	ERJ6GEYJ102	RES,M 1K-J-1/10
R2326	ERJ6GEYJ102	RES,M 1K-J-1/10	R3031	ERJ6GEYJ471	RES,M 470-J-1/10
R2327	ERJ6GEYJ101	RES,M 100-J-1/10	R3033	ERJ6GEYJ681	RES,M 680-J-1/10
R2331	ERJ6GEYJ102	RES,M 1K-J-1/10	R3034	ERJ6GEYJ471	RES,M 470-J-1/10
R2332	ERJ6GEYJ473	RES,M 47K-J-1/10	R3036	ERJ6GEYJ681	RES,M 680-J-1/10
R2333	ERJ6GEYJ102	RES,M 1K-J-1/10	R3037	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R2334	ERJ6GEYJ103	RES,M 10K-J-1/10	R3038	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R2335	ERJ6GEYJ183	RES,M 18K-J-1/10	R3039	ERJ6GEYJ681	RES,M 680-J-1/10
R2336	ERJ6GEYJ472	RES,M 4.7K-J-1/10	R3040	ERJ6GEYJ101	RES,M 100-J-1/10
R2337	ERJ6GEYJ332	RES,M 3.3K-J-1/10			
R2338	ERJ6GEYJ332	RES,M 3.3K-J-1/10			
R2339	ERJ6GEYJ183	RES,M 18K-J-1/10			
R2340	ERJ6GEYJ472	RES,M 4.7K-J-1/10			
R2341	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>			
R2342	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>			
R2343	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>			
R2344	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>			
R2345	ERJ6GEYJ103	RES,M 10K-J-1/10			
R2346	ERJ6GEYJ102	RES,M 1K-J-1/10			
R2347	ERJ6GEYJ473	RES,M 47K-J-1/10			
R2348	ERJ6GEYJ102	RES,M 1K-J-1/10			
R2351	ERJ6GEYJ224	RES,M 220K-J-1/10			
R2352	ERJ6GEYJ154	RES,M 150K-J-1/10			
R3001	ERJ6GEYJ221	RES,M 220-J-1/10			
R3002	ERJ6GEYJ102	RES,M 1K-J-1/10			
R3003	ERJ6GEYJ221	RES,M 220-J-1/10			
R3004	ERJ6GEYJ102	RES,M 1K-J-1/10			
R3005	ERJ6GEYJ221	RES,M 220-J-1/10			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R3051	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3190	ERJ6GEYJ152	RES,M 1.5K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3052	ERJ6GEYJ333	RES,M 33K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3191	ERJ6GEYJ223	RES,M 22K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3053	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3192	ERJ6GEYJ223	RES,M 22K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3054	ERJ6GEYJ333	RES,M 33K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3193	ERJ6GEYJ104	RES,M 100K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3055	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3194	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3056	ERJ6GEYJ221	RES,M 220-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3195	ERJ6GEYJ473	RES,M 47K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3057	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3196	ERJ6GEYJ104	RES,M 100K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3058	ERJ6GEYJ331	RES,M 330-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3197	ERJ6GEYJ104	RES,M 100K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3065	ERJ6GEYJ680	RES,M 68-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3198	ERJ6GEYJ104	RES,M 100K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R3073	ERJ6GEYJ103	RES,M 10K-J-1/10	R3290	ERDS2TJ821	RES,C 820-J-1/4
R3075	ERJ6GEYJ184	RES,M 180K-J-1/10	R3291	ERDS2TJ332	RES,C 3.3K-J-1/4
R3076	ERJ6GEYJ184	RES,M 180K-J-1/10	R3293	ERDS2TJ561	RES,C 560-J-1/4
R3079	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R3294	ERDS2TJ101	RES,C 100-J-1/4
R3081	ERJ6GEYJ184	RES,M 180K-J-1/10	R4310	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R3082	ERJ6GEYJ184	RES,M 180K-J-1/10	R4311	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R3087	ERJ6GEYJ184	RES,M 180K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4326	ERD25TJ221	RES,C 220-J-1/4
R3088	ERJ6GEYJ184	RES,M 180K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4327	ERJ6GEYJ331	RES,M 330-J-1/10
R3151	ERJ6GEYJ750	RES,M 75-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4328	ERJ6GEYJ560	RES,M 56-J-1/10
R3152	ERJ6GEYJ224	RES,M 220K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4329	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R3153	ERJ6GEYJ750	RES,M 75-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4330	ERJ6GEYJ561	RES,M 560-J-1/10
R3154	ERJ6GEYJ224	RES,M 220K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4331	ERJ6GEYJ471	RES,M 470-J-1/10
R3155	ERJ6GEYJ750	RES,M 75-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4332	ERJ6GEYJ393	RES,M 39K-J-1/10
R3189	ERJ6GEYJ333	RES,M 33K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R4333	ERJ6GEYJ304	RES,M 300K-J-1/10
			R4334	ERJ6GEYJ152	RES,M 1.5K-J-1/10
			R4336	ERJ6GEYJ680	RES,M 68-J-1/10
			R4337	ERJ6GEYJ222	RES,M 2.2K-J-1/10
			R4338	ERJ6GEYJ222	RES,M 2.2K-J-1/10
			R4339	ERJ6GEYJ102	RES,M 1K-J-1/10
			R4340	ERJ6GEYJ334	RES,M 330K-J-1/10
			R4342	ERJ6GEYJ223	RES,M 22K-J-1/10
			R4344	ERJ6GEYJ682	RES,M 6.8K-J-1/10
			R4345	ERJ6GEYJ103	RES,M 10K-J-1/10
			R6501	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>
			R6501	ERJ6GEYJ560	RES,M 56-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R6502	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW	R6515	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW
R6502	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6515	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6503	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF25W CT-27XF25CW	R6516	ERJ6GEYJ123	RES,M 12K-J-1/10 CT-27SF25W CT-27XF25CW
R6503	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6516	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6504	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF25W CT-27XF25CW	R6517	ERJ6GEYJ562	RES,M 5.6K-J-1/10 CT-27SF25W CT-27XF25CW
R6504	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6518	ERJ6GEYJ333	RES,M 33K-J-1/10 CT-27SF25W CT-27XF25CW
R6505	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW	R6518	ERJ6GEYJ681	RES,M 680-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6505	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6519	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6506	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW	R6519	ERJ6GEYJ333	RES,M 33K-J-1/10 CT-27SF25W CT-27XF25CW
R6506	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6520	ERJ6GEYJ182	RES,M 1.8K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6507	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW	R6520	ERJ6GEYJ751	RES,M 750-J-1/10 CT-27SF25W CT-27XF25CW
R6507	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6521	ERJ6GEYJ102	RES,M 1K-J-1/10
R6508	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW	R6522	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW
R6508	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6522	ERJ6GEYJ681	RES,M 680-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6509	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW	R6523	ERJ6GEYJ221	RES,M 220-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6509	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6523	ERJ6GEYJ562	RES,M 5.6K-J-1/10 CT-27SF25W CT-27XF25CW
R6510	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW	R6524	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6510	ERJ6GEYJ560	RES,M 56-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6524	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW
R6511	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6525	ERJ6GEYJ333	RES,M 33K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6511	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF25W CT-27XF25CW	R6526	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW
R6512	ERJ6GEYJ102	RES,M 1K-J-1/10	R6526	ERJ6GEYJ333	RES,M 33K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6513	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW	R6527	ERJ6GEYJ152	RES,M 1.5K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6513	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6527	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF25W CT-27XF25CW
R6514	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6528	ERJ6GEYJ123	RES,M 12K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R6528	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF25W CT-27XF25CW	R6541	ERJ6GEYJ561	RES,M 560-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6529	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF25W CT-27XF25CW	R6542	ERJ6GEYJ561	RES,M 560-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6529	ERJ6GEYJ332	RES,M 3.3K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6542	ERJ6GEYJ680	RES,M 68-J-1/10 CT-27SF25W CT-27XF25CW
R6530	ERJ6GEYJ222	RES,M 2.2K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6543	ERJ6GEYJ122	RES,M 1.2K-J-1/10 CT-27SF25W CT-27XF25CW
R6530	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF25W CT-27XF25CW	R6543	ERJ6GEYJ681	RES,M 680-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6531	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6544	ERJ6GEYJ102	RES,M 1K-J-1/10 CT-27SF25W CT-27XF25CW
R6531	ERJ6GEYJ182	RES,M 1.8K-J-1/10 CT-27SF25W CT-27XF25CW	R6544	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6532	ERJ6GEYJ393	RES,M 39K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6545	ERJ6GEYJ221	RES,M 220-J-1/10 CT-27SF25W CT-27XF25CW
R6532	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF25W CT-27XF25CW	R6545	ERJ6GEYJ222	RES,M 2.2K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6533	ERJ6GEYJ152	RES,M 1.5K-J-1/10 CT-27SF25W CT-27XF25CW	R6546	ERJ6GEYJ223	RES,M 22K-J-1/10
R6533	ERJ6GEYJ562	RES,M 5.6K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6547	ERJ6GEYJ223	RES,M 22K-J-1/10
R6534	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF25W CT-27XF25CW	R6548	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW
R6535	ERJ6GEYJ181	RES,M 180-J-1/10 CT-27SF25W CT-27XF25CW	R6549	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6535	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6549	ERJ6GEYJ222	RES,M 2.2K-J-1/10 CT-27SF25W CT-27XF25CW
R6536	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF25W CT-27XF25CW	R6550	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6536	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6550	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF25W CT-27XF25CW
R6537	ERJ6GEYJ392	RES,M 3.9K-J-1/10 CT-27SF25W CT-27XF25CW	R6551	ERJ6GEYJ332	RES,M 3.3K-J-1/10 CT-27SF25W CT-27XF25CW
R6537	ERJ6GEYJ821	RES,M 820-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6551	ERJ6GEYJ821	RES,M 820-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6538	ERJ6GEYJ122	RES,M 1.2K-J-1/10 CT-27SF25W CT-27XF25CW	R6552	ERJ6GEYJ101	RES,M 100-J-1/10 CT-27SF25W CT-27XF25CW
R6538	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6552	ERJ6GEYJ223	RES,M 22K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6539	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6553	ERJ6GEYJ101	RES,M 100-J-1/10 CT-27SF25W CT-27XF25CW
R6540	ERJ6GEYJ151	RES,M 150-J-1/10 CT-27SF25W CT-27XF25CW	R6553	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6540	ERJ6GEYJ471	RES,M 470-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW	R6554	ERJ6GEYJ154	RES,M 150K-J-1/10 CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW
R6541	ERJ6GEYJ103	RES,M 10K-J-1/10 CT-27SF25W CT-27XF25CW	R6554	ERJ6GEYJ473	RES,M 47K-J-1/10 CT-27SF25W CT-27XF25CW

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
R6555	ERJ6GEYJ104	RES,M 100K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6570	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6555	ERJ6GEYJ153	RES,M 15K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6571	ERJ6GEYJ680	RES,M 68-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6556	ERJ6GEYJ333	RES,M 33K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6572	ERJ6GEYJ220	RES,M 22-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6556	ERJ6GEYJ513	RES,M 51K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6573	ERJ6GEYJ220	RES,M 22-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6557	ERJ6GEYJ123	RES,M 12K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6574	ERJ6GEYJ560	RES,M 56-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6557	ERJ6GEYJ243	RES,M 24K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6575	ERJ6GEYJ332	RES,M 3.3K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6558	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6576	ERJ6GEYJ332	RES,M 3.3K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6558	ERJ6GEYJ331	RES,M 330-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6577	ERJ6GEYJ153	RES,M 15K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6559	ERJ6GEYJ223	RES,M 22K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6578	ERJ6GEYJ333	RES,M 33K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6559	ERJ6GEYJ272	RES,M 2.7K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6579	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6560	ERJ6GEYJ124	RES,M 120K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6580	ERJ6GEYJ301	RES,M 300-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6560	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6581	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6561	ERJ6GEYJ223	RES,M 22K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6582	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6562	ERJ6GEYJ681	RES,M 680-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6583	ERJ6GEYJ101	RES,M 100-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6563	ERJ6GEYJ392	RES,M 3.9K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6584	ERJ6GEYJ223	RES,M 22K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6564	ERJ6GEYJ202	RES,M 2K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6585	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6565	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	R6586	ERJ6GEYJ103	RES,M 10K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6565	ERJ6GEYJ122	RES,M 1.2K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6589	ERJ6GEYJ102	RES,M 1K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6566	ERJ6GEYJ431	RES,M 430-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	R6590	ERJ6GEYJ680	RES,M 68-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
R6566	ERJ6GEYJ681	RES,M 680-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>	J311	ERDS2TJ391	RES,C 390-J-1/4 <i>CT-36SF35W CT-36XF35CW</i>
R6567	ERJ6GEYJ471	RES,M 470-J-1/10			
R6568	ERJ6GEYJ202	RES,M 2K-J-1/10 <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>			
R6568	ERJ6GEYJ471	RES,M 470-J-1/10 <i>CT-27SF25W CT-27XF25CW</i>			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
SWITCHES					
S001	EVQPF106K	SWITCH	M003	M68L NK161X	CRT, 27" CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
S002	EVQPF106K	SWITCH	M004	A90AHS50X	CRT, 36" CT-36SF35W CT-36XF35CW
S003	EVQPF106K	SWITCH	M005	ETC35C65NA	YOKE, CONVERGENCE <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
S004	EVQPF106K	SWITCH	M006	ETC39C65NA	YOKE, CONVERGENCE <i>CT-36SF35W CT-36XF35CW</i>
S005	EVQPF106K	SWITCH	DY	KDY4UW739F	YOKE, DEFLECTION CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
S006	EVQPF106K	SWITCH	DY	TLYA028	YOKE, DEFLECTION CT-36SF35W CT-36XF35CW
S007	EVQPF106K	SWITCH	M007	TMM2A30702	WEDGE, YOKE
TRANSFORMERS			M008	TJS1A5211	SOCKET, CRT CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
T001	ETP28Z436AF	TRANSFORMER, POWER	M009	TJS2A5001	SOCKET, CRT CT-36SF35W CT-36XF35CW
T501	ETH19Y70AYM	TRANSFORMER, HORIZONTAL DRIVER	M010	0FMK014ZZ	CONVERGENCE CORRECTOR STRIP
T502	ETE19Z30AY	TRANSFORMER, HORIZONTAL COUPLING	DEG	0LK19045A	COIL, DEGAUSSING 27" CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW
T551	KFT4AB139F	TRANSFORMER, FLYBACK <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>	DEG	0LK19049A	COIL, DEGAUSSING 36" CT-36SF35W CT-36XF35CW
T551	KFT6AB140F1	TRANSFORMER, FLYBACK <i>CT-36SF35W CT-36XF35CW</i>	M011	TXFYA010DCR	ASSY, DAG GND <i>CT-36SF35W CT-36XF35CW</i>
T801	ETS29AK2K6PC	TRANSFORMER, POWER	M012	TXF3A01ZER	ASSY, DAG GROUND <i>CT-27SF25W CT-27XF25CW CT-27SF35W CT-27XF35CW</i>
T1551	ETS33AC3T6AD	TRANSFORMER <i>CT-36SF35W CT-36XF35CW</i>	M013	TSX2AA0011	LINE CORD
CRYSTALS/FILTERS			M014	TMW2A97121	STRAIN RELIEF: AC LINE CORD
X001	TSSA096	CRYSTAL	M015	TAS2AA0008	SPEAKER
X101	M1972M	FILTER	JK3001	TJB2AA0121	TERMINAL, REAR A/V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
X102	EFCWS4504AB	FILTER 4.5MHZ	JK3001	TJB2AA0122	TERMINAL, REAR A/V <i>CT-27SF25W CT-27XF25CW</i>
X201	EFC4R5MS4W	FILTER 4.5MHZ BANDPASS	JK3004	TJB2AA0131	TERMINAL, FRONT A/V <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
X501	TAFCSB503F38	CRYSTAL, CLOCK	M016	TJS2AX00401	PUSH TERMINAL, SPEAKER <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
X601	TSS816MX	CRYSTAL 3.58MHZ OSCILLATOR	M017	ENPE623	EF SPLITTER <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
X1801	TSSA050	CRYSTAL OSCILLATOR	M018	TMW2AF0081	REAR BRACKET <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>
X2102	EFCWS4504AB	FILTER 4.5MHZ <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	M019	TXFKU628SER	ASSY, CABINET BACK 27" <i>CT-27SF25W</i>
X2103	EFCKM1958M	CERAMIC FILTER <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>	M020	TXFKU648SER	ASSY, CABINET BACK 27" <i>CT-27XF25CW</i>
OTHERS					
RM001	RPM-637CBRS1	IR RECEIVER, REMOTE CONTROL			
TNR001	ENV56D35G3	TUNER CT-27SF25W CT-27XF25CW			
TNR001	ENV56D36G3	TUNER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW			
TNR2101	ENV56D36G3	TUNER CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW			
M001	EUR511151	TRANSMITTER, REMOTE CONTROL <i>CT-27SF35W CT-27XF35CW CT-36SF35W CT-36XF35CW</i>			
M002	EUR511170	TRANSMITTER, REMOTE CONTROL <i>CT-27SF25W CT-27XF25CW</i>			
M003	UR51EC892A	BATTERY COVER, REMOTE			

PARTS LIST

REPLACEMENT PARTS LIST

CT-27SF25W, CT-27XF25CW, CT-27SF35W, CT-27XF35CW, CT-36SF35W, CT-36XF35CW

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REF NO.	PART NO.	DESCRIPTION	REF NO.	PART NO.	DESCRIPTION
M021	TXFKU638SER	ASSY, CABINET BACK 27" <i>CT-27SF35W</i>	M034	TKP2AA01502M	DOOR <i>CT-36SF35W</i>
M022	TXFKU658SER	ASSY, CABINET BACK 27" <i>CT-27XF35CW</i>	M035	TKP2AA01503M	DOOR <i>CT-36XF35CW</i>
M023	TXFKU668SER	ASSY, CABINET BACK 36" <i>CT-36SF35W</i>	M036	TEK6935	DOOR, CATCH <i>CT-27SF35W</i> <i>CT-27XF35CW CT-36SF35W</i> <i>CT-36XF35CW</i>
M024	TXFKU678SER	ASSY, CABINET BACK 36" <i>CT-36XF35CW</i>	M037	TBM2AA0021	PANASONIC BADGE <i>CT-36SF35W</i> <i>CT-36XF35CW</i>
M025	TXFKY728SER	ASSY, CABINET FRONT 27" <i>CT-27SF25W</i>	M038	TBM2A10141	BADGE, PANASONIC <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>
M026	TXFKY748SER	ASSY, CABINET FRONT 27" <i>CT-27XF25CW</i>	M039	TQB2AA0245	MANUAL, OWNERS <i>CT-27SF35W</i> <i>CT-36SF35W</i>
M027	TXFKY738SER	ASSY, CABINET FRONT 27" <i>CT-27SF35W</i>	M040	TQB2AA0247	MANUAL, OWNERS (ENG/FR) <i>CT-27XF35CW CT-36XF35CW</i>
M028	TXFKY758SER	ASSY, CABINET FRONT 27" <i>CT-27XF35CW</i>	M041	TQB2AA0274	MANUAL, OWNERS (ENG/SP) <i>CT-27SF25W</i>
M029	TXFKY768SER	ASSY, CABINET FRONT 36" <i>CT-36SF35W</i>	M042	TQB2AA0275	MANUAL, OWNERS (ENG/FR) <i>CT-27XF25CW</i>
M030	TXFKY778SER	ASSY, CABINET FRONT 36" <i>CT-36XF35CW</i>	M043	TQB2AA7018-1	REMOTE CONTROL GUIDE (ENG/ SP) <i>CT-27SF25W</i>
M031	TKP2AA01401	SMOKED SHEET	M044	TQB2AA7020	REMOTE CONTROL GUIDE (ENG/ FR) <i>CT-27XF25CW</i>
M032	TBX2AA1501G	BUTTON, 7-KEY <i>CT-27SF25W</i> <i>CT-27XF25CW CT-27SF35W</i> <i>CT-27XF35CW</i>	M045	TQB2AA7026	REMOTE CONTROL GUIDE (ENG/ SP) <i>CT-27SF35W CT-36SF35W</i>
M033	TBX2AA1601G	BUTTON, 7-KEY <i>CT-36SF35W</i> <i>CT-36XF35CW</i>	M046	TQB2AA7028	REMOTE CONTROL GUIDE (ENG/ FR) <i>CT-27XF35CW CT-36XF35CW</i>

**DESCRIPTION OF ABBREVIATIONS
GUIDE**

RESISTOR			
TYPE		TOLERANCE	
C	Carbon	F	+/- 1%
F	Fuse	J	+/- 5%
M	Metal Oxide	K	+/- 10%
S	Solid	M	+/- 20%
W	Wire Wound	G	+/- 2%

RES, C 270-J-1/4

CAPACITOR			
TYPE		TOLERANCE	
C	Ceramic	C	+/- 0.25pF
E	Electrolytic	D	+/- 0.5pF
P	Polyester	F	+/- 1pF
S	Styrol	J	+/- 5%
T	Tantalum	K	+/- 10%
		L	+/- 15%
		M	+/- 20%
		P	+100% -0%
		Z	+80% -20%

CAP, P .068UF-K-50V

SERVICEMAN MODE (ELECTRONIC CONTROL) SERVICE ADJUSTMENT VALUES

Model _____ Ser # _____ Date _____

Note: Record the original settings PRIOR to modifying the registers.

Mode	Service Adjustment	Adjustment Range	Def Val.	Original Value	New Value
Sub Adjustments					
B 00	Sub Color	0 - 63	32		
B 01	Sub Tint	0 - 63	32		
B 02	Sub Brightness	0 - 192	96		
B 03	Sub Contrast	0 - 63	32		
B 04	RF AGC	0 - 255	135		
B 05	Sub Brightness for AI	0 - 192	98		
B 06	VCJ Sharpness	0 - 127	88		
B 07	Sub Color for AI	0 - 15	7		
B 08	Sub Tint for AI	0 - 15	7		
Cut-Off Adjustments					
C 00	RED Cutoff	*	1 156		
C 01	GRN Cutoff	0 - 255	64		
C 02	BLU Cutoff	*	0 128		
C 03	Brightness	0 - 63	32		
C 04	Sub Brightness	0 - 192	87		
C 05	R Drive	0 - 255	96		
C 06	Blue Drive	0 - 255	96		
C 07	R Drive Correct(COO)	0 - 63	32		
C 08	B Drive Correct(COO)	0 - 63	32		
C 09	R Drive Correct(WAR)	0 - 63	32		
C 0A	B Drive Correct(WAR)	0 - 63	32		
Pincushion Adjustments					
D 00	Vertical Amplitude	0 - 127	45		
D 01	Vertical Linearity	0 - 63	32		
D 02	Vertical S Correction	0 - 63	32		
D 03	Horizontal Amplitude	0 - 63	32		
D 04	Horizontal Center	0 - 31	15		
D 05	EW Parabola	0 - 63	16		
D 06	Trapezoid	0 - 63	32		
D 07	EW Corner 2	0 - 15	7		
D 08	EW Corner 1	0 - 15	7		
D 09	Vertical EHT	0 - 15	8		
D 0A	Horizontal EHT	0 - 15	8		
D 0B	Vertical Position	0 - 63	32		

Mode	Service Adjustment	Adjustment Range	Def. Val.	Original Value	New Value
PIP Adjustments					
P 00	PIP Color	0 - 127	63		
P 01	PIP Tint	0 - 255	54		
P 02	PIP Brightness	0 - 31	15		
P 03	PIP Contrast	0 - 127	66		
P 04	V Position 9 Up	0 - 255	120		
P 05	V Position 9 Down	0 - 255	122		
P 06	H Position 9 Left	0 - 255	32		
P 07	H Position 9 Right	0 - 255	7		
P 08	V Position 16 Up	0 - 255	7		
P 09	V Position 16 Down	0 - 255	8		
P 0A	H Position 16 Left	0 - 255	8		
P 0B	H Position 16 Right	0 - 255	32		
P 0C	PIP Freerun	0 - 0	0		
P 0D	PIP Y Delay	0 - 15	7		
Options Adjustments					
S 00	Preshoot/Overshoot	0 - 7	3		
S 01	Black Expansion Gain	0 - 15	7		
S 02	White Gamma Level	0 - 15	7		
S 03	White Gamma Gain	0 - 15	8		
S 04	Small Gamma Gain	0 - 15	7		
S 5	R-Y Dem Axis(angle)	0 - 31	16		
S 06	R-Y Dem Axis(gain)	0 - 63	32		
S 07	G-Y Ratio SW	0 - 3	1		
S 08	White Lettering Corr.	0 - 15	7		
S 09	White Lettering Slice	0 - 15	8		
S 0A	VCJ-CD-TV	0 - 255	120		
S 0B	VCJ-CD-AD	0 - 255	120		
S 0C	Grad. of Contrast	0 - 255	122		
S 0D	MTS Input Level	0 - 63	32		
S 0E	MTS PLL VCO	0 - 63	32		
S 0F	MTS Filter	0 - 63	32		
S 10	MTS Low Separation	0 - 63	32		
S 11	MTS High Separation	0 - 63	32		
S 12	Clock Adjustment	0 - 255	128		

* Adjustment indicated in steps:

- 0 20 ~ 0 235
- 1 20 ~ 1 235
- 2 20 ~ 2 235
- 3 20 ~ 3 235

Note: Some adjustment modes may not be available in some models depending on available options.

SERVICEMAN MODE (ELECTRONIC CONTROL) SERVICE ADJUSTMENT VALUES

Model _____ Ser # _____ Date _____

Note: Record the original settings PRIOR to modifying the registers.

Mode	Service Adjustment	Adjustment Range	Def. Val.	Original Value	New Value
Options Adjustments (cont.)					
S 13	S-Cutoff R	0 - 28	12		
S 14	S-Cutoff B	0 - 28	15		
S 15	Loudness	0 - 15	8		
S 16	CC Digital Filter SW	0 - 1	1		
S 17	CC Scroll	0 - 2	1		
S 18	Spatializer Effect	0 - 63	32		
Y Options Adjustments					
Y 00	Sync Separation	0 - 7	4		
Y 01	Sync Separation	0 - 255	122		
Y 02	Sync Separation	0 - 255	122		
Y 03	Sync Separation	0 - 255	122		
Y 04	V Comp Hold(start)	0 - 7	3		
Y 05	V Comp Hold(end)	0 - 15	7		
Y 06	H Clamp Mode Level	0 - 255	122		
Y 07	V Edge Coring Level	0 - 31	16		
Y 08	V Edge Corr Limit Lev	0 - 15	7		
Y 09	3D NStand Level	0 - 15	8		
Y 0A	3D Stand Level	0 - 15	8		
Y 0B	1F2F Mdet High level	0 - 15	7		
Y 0C	1F2F Mdet Low level	0 - 15	7		
Y 0D	Mdet Set	0 - 15	7		
Y 0E	Mdet Test	0 - 1	0		
Y 0F	V Edge Gain	0 - 3	1		
Y 10	1F Color MLevel Set	0 - 15	8		
Y 11	1F Color MLevel Set	0 - 15	7		
Y 12	Mdet Set	0 - 15	7		
Y 13	Color MEdge Det Lev	0 - 15	7		
Y 14	1F Mdet level	0 - 15	7		
Y 15	2F Mdet level	0 - 15	7		
Y 16	1F Mdet Filter SW	0 - 1	0		
Y 17	1F Mdet Edge Sens	0 - 1	1		
Y 18	1F Mdet Sens	0 - 15	8		
Y 19	1F Mdet High level	0 - 15	7		
Y 1A	1F Mdet Low level	0 - 15	7		
Y 1B	2F Mdet High level	0 - 15	8		
Y 1C	2F Mdet Low level	0 - 15	7		
Y 1D	Mdet Edge Det Level	0 - 15	7		

Mode	Service Adjustment	Adjustment Range	Def. Val.	Original Value	New Value
Y Options Adjustments					
Y 1E	AI V Sampling (start)	0 - 31	15		
Y 1F	AI V Sampling (stop)	0 - 63	32		
Y 20	AI H Sampling (start)	0 - 31	15		
Y 21	AI H Sampling (stop)	0 - 63	32		
Y 22	BGP Position	0 - 255	122		
Y 23	B Exp APL Thresh L	0 - 63	32		
Y 24	Pedestal Comp	0 - 7	3		
Y 25	B Exp APL Calc	0 - 31	15		
Y 26	B Comp Var Limiter	0 - 15	7		
Y 27	Luminance Diff Gain	0 - 3	1		
Y 28	Pseudo Contour Killer	0 - 1	0		
Y 29	B Exp APL Reflection	0 - 1	0		
Y 2A	Base Value	0 - 15	7		
Y 2B	B Exp Var Reflection	0 - 3	2		
Y 2C	AntiBloom Threshold	0 - 63	32		
Y 2D	S1 Histogram Limiter	0 - 63	32		
Y 2E	S2 Histogram Limiter	0 - 63	32		
Y 2F	S3 Histogram Limiter	0 - 63	32		
Y 30	S4 Histogram Limiter	0 - 63	32		
Y 31	Ymin Det Offset	0 - 7	3		
Y 32	Ymin Det Gain	0 - 3	2		
Y 33	Ymin Limiter	0 - 63	32		
Y 34	Ymax Limit Value	0 - 63	32		
Y 35	AI Fleshtone SW	0 - 1	1		
Y 36	APL Corr Limiter	0 - 63	32		
Y 37	APL Corr SW point	0 - 127	62		
Y 38	Col Cont Level(L APL)	0 - 63	32		
Y 39	Col Cont Gain(L APL)	0 - 3	1		
Y 3A	Col Cont Gain(H APL)	0 - 63	32		
Y 3B	AI Col Corr Gain	0 - 3	1		
Y 3C	Color Det Gain	0 - 3	1		
Y 3D	Color Det Threshold	0 - 63	32		
Y 3E	DSC Noise Removal	0 - 63	32		
Y 3F	DSC Delay SW	0 - 1	0		
Y 40	DSC Off SW	0 - 1	1		

Note: Some adjustment modes may not be available in some models depending on available options.

SERVICEMAN MODE (ELECTRONIC CONTROL) SERVICE ADJUSTMENT VALUES

Model _____ Ser # _____ Date _____

Note: Record the original settings PRIOR to modifying the registers.

Mode	Service Adjustment	Adjustment Range	Def. Val.	Original Value	New Value
Y Options Adjustments					
Y 41	DSC Limit Level	0 - 255	112		
Y 42	Clip point Edge Corr	0 - 15	8		
Y 43	BPF SW (RF)	0 - 3	2		
Y 44	BPF SW (Video)	0 - 3	1		
Y 45	DSC Gain SW(big sig)	0 - 3	1		
Y 46	DSC Limit SW(big sig)	0 - 63	32		
Y 47	DSC Gain SW(sm sig)	0 - 3	1		
Y 48	DSC Limit SW(sm sig)	0 - 63	32		
Y 49	Edge Corr Gain SW	0 - 15	8		
Y 4A	Detail corr Limit Lev	0 - 15	8		
Y 4B	B corr Gain on Edge	0 - 3	1		
Y 4C	Coring Level on Edge	0 - 63	32		
Y 4D	VM Freq SW	0 - 1	1		
Y 4E	VM Coring Level	0 - 15	8		
Y 4F	VM Limit Level	0 - 127	62		
Y 50	VM B corr SW	0 - 1	0		
Y 51	Y Delay Adj	0 - 7	3		
Y 52	C Delay Adj(RF)	0 - 15	8		
Y 53	C Delay Adj(Video)	0 - 15	8		
Y 54	DCOR corr COEFFI A	0 - 255	122		

Mode	Service Adjustment	Adjustment Range	Def. Val.	Original Value	New Value
Y Options Adjustments					
Y 55	DCOR corr COEFFI B	0 - 255	122		
Y 56	DCOR corr COEFFI C	0 - 255	122		
Y 57	VMLM corr COEFFI A	0 - 255	122		
Y 58	VMLM corr COEFFI B	0 - 255	122		
Y 59	Sharp Offset Level	0 - 127	62		
Y 5A	WECOR Thresh(s sig)	0 - 255	122		
Y 5B	WECOR Thresh(w sig)	0 - 255	122		
Y 5C	Burst in (16msXn)	0 - 255	122		
Y 5D	Burst out (16msXn)	0 - 255	122		
Y 5E	SD Threshold(on)	0 - 255	122		
Y 5F	SD Threshold(off)	0 - 255	122		
Y 60	VP Threshold max	0 - 255	122		
Y 61	VP Threshold min	0 - 255	122		
Y 62	VP (NG→OK) 16msXn	0 - 255	122		
Y 63	VP (OK→NG) 16msXn	0 - 255	122		
Y 64	Std time (16msXn)	0 - 255	122		
Y 65	SD (NG→OK) 16msXn	0 - 255	122		
Y 66	SD (OK→NG) 16msXn	0 - 255	122		
Y 67	Freq Avg Quantity	0 - 4	2		

Note: Some adjustment modes may not be available in some models depending on available options.

Service Manual

Color Television
Supplement Manual
(DX1L)

Supplement



Panasonic

Models	Chassis
CT-36SF35W	AEDP322
CT-36XF35CW	AEDP322
CT-27SF35W	AMEDP323
CT-27SF35CW	AMEDP323
CT-27SF25W	AEDP323
CT-27XF25CW	AEDP323

 **SPATIALIZER**
3-D STEREO

This **Supplement Service Manual** is issued to add/correct pages to the Main Manual of DX1L family models listed above. The listed models are included in the Main Service Manual No. MTC9806771C1. Please file and use this manual with the Service Manual MTC9806771C1.

WARNING! This Service Manual is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. **Products powered by electricity should be serviced or repaired only by experienced professional technicians.** Any attempt to service or repair the product or products dealt with in this Service Manual by anyone else could result in serious injury or death."

The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this Main Manual.

Panasonic®

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Important Safety Notice

Special components are used in this television set which are important for safety. These parts are identified on the schematic diagram by the symbol  and printed in **BOLD TYPE** on the replacement part list. It is essential that these critical parts are replaced with the manufacturer's specified replacement part to prevent X-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An **Isolation Transformer** should always be used during the servicing of a receiver whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the Receiver from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always Replace Protective Devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the Receiver. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials are present when this Receiver is operating. Operation of the Receiver without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **Handling the Picture Tube**. Rough handling may cause it to implode due to atmospheric pressure. (14.7 lbs per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. dag ground lead) to the anode with a well insulated wire or use a grounding probe.

Avoid prolonged exposure at close range to unshielded areas of the picture tube to prevent exposure to X-ray radiation.

The **Test Picture Tube** used for servicing the chassis at the bench should incorporate safety glass and magnetic shielding. The safety glass provide shielding for the tube viewing area against X-ray radiation as well as implosion. The magnetic shield limits the X-ray radiation around the bell of the picture tube in addition to the restricting magnetic effects. When using a picture tube test jig for service, ensure that the jig is capable of handling **45kV** without causing X-ray radiation.

Before returning a serviced receiver to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

Unplug the AC cord and connect a jumper between the two plug prongs.

Measure the resistance between the jumpered AC plug and expose metallic parts such as screwheads, antenna terminals, control shafts, etc. If the exposed

metallic part has a return path to the chassis, the reading should be between 240k Ω and 5.2M Ω . If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (Fig. 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5k Ω 10 watt resistor in parallel with a 0.15 μ F capacitor between an exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other exposed metallic parts.

Verify that any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson Model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 1/2 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the Receiver must be repaired and rechecked before it is returned to the customer.

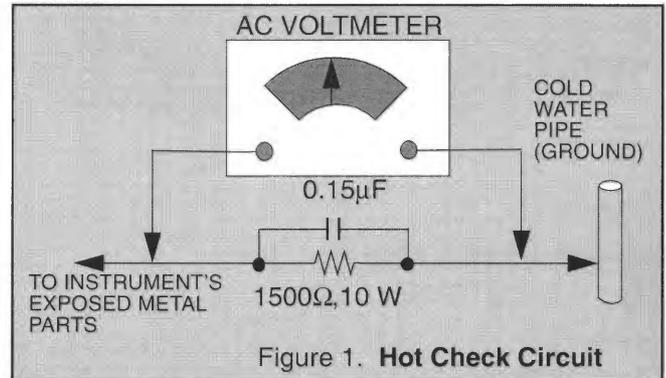


Figure 1. Hot Check Circuit

X-ray Radiation

WARNING: The potential source of X-ray radiation in the TV set is in the High Voltage section and the picture tube.

Note: It is important to use an accurate, calibrated high voltage meter.

Set the **brightness, picture, sharpness** and **color** controls to Minimum.

Measure the High Voltage. The high voltage should be **31.0kV \pm 1.0kV** for 36" receivers and **28.7kV \pm 1.0kV** for 27" receivers. If the upper limit is out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

Horizontal Oscillator Disable Circuit Test

This test must be performed as a final check before the Receiver is returned to the customer. See **Horizontal Oscillator Disable Circuit Procedure Check** in this manual.

Service Notes

Note: These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.

Leadless Chip Component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chips capacitor or resistor solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code - 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper). Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

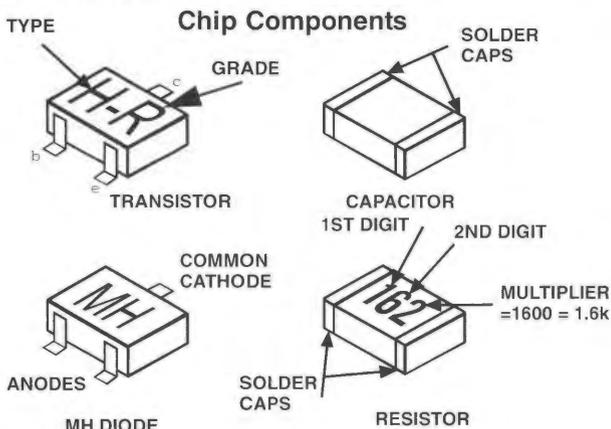
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component Removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds.

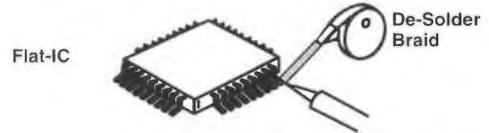


How to Replace Flat-IC

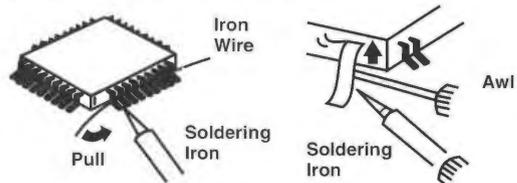
- Required Tools -

- Soldering iron
- De-solder braids
- Iron wire or small awl
- Magnifier

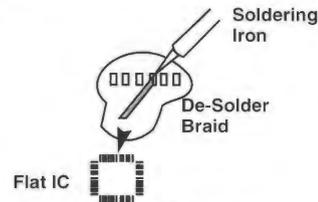
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.



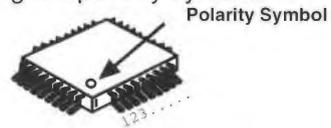
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.



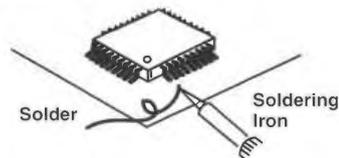
3. Remove the solder from all the pads of the Flat-IC by using a de-solder braid.



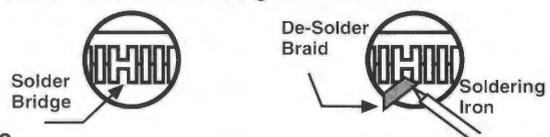
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.



5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



Service Notes (Continued)

IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CTR DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the Receiver to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground (∇) or (\nearrow) when servicing, or incorrect voltages will be measured.

WARNING: This Receiver has been designed to meet or exceed applicable safety and X-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to X-ray radiation and shock and fire hazard, parts indicated with the symbol  on the schematic must be replaced with identical parts. Order parts from the manufacturer's parts center using the parts numbers shown in this service manual, or provide the chassis number and the part reference number.

For optimum performance and reliability, all other parts should be replaced with components of identical specification.

Horizontal Oscillator Disable Circuit

This chassis employs a special circuit to protect against excessive high voltage and beam current. If, for any reason, the high voltage and beam current exceed a predetermined level this protective circuit activates and detunes the horizontal oscillator that limits the high voltage. The over-voltage protection circuit is not adjustable. However, if components indicated by the symbol  on the schematic in either the horizontal sweep system or the over-voltage protection circuit itself are changed, the operation of the circuit should be checked using the following procedure:

Equipment needed to check the disabled circuit:

1. Voltmeter (0 - 200V scale)
2. High Voltage Meter (0- 50kV)
3. Variac or Isolation Transformer
4. 1k ohm VR
5. Frequency counter

Preparation:

1. Connect Receiver to AC 120 Volts. Do not turn ON.
2. Connect Frequency Counter to pins 5 & 6 on FTB.
3. Connect HIGH VOLTAGE meter to 2nd anode (H.V. Button).

Note: Use cold ground for negative lead or DAG GND connector C10.

4. Prepare DC Ammeter/1k ohm VR jig to be connected between TPP82 as shown above.

Procedure:

1. Turn Power ON. Apply a monoscope pattern.
2. Set Picture and Brightness controls to a minimum.
3. Turn Power OFF.
4. Connect DC Ammeter/1k ohm VR jig between TPP81 and TPP82 as shown above.
5. Turn ON power. Turn On PIP, same channel. Observe and note current and frequency.
6. Using the variable resistor slowly increase the current (as shown on ammeter) until the horizontal sync frequency abruptly increases (as shown on frequency counter) indicating that the horizontal frequency is just beginning to pull out of sync. Confirm that the PIP picture disappears before the Main picture horizontal sync is disabled.
7. Observe the high Voltage meter. HIGH VOLTAGE should read **less than: 37.5kV for 27" and 41.5k for 36"**.
8. Turn power OFF. Remove DC Ammeter/1k ohm VR jig, frequency counter and HV meter.
9. Turn power ON. Reset Picture and Brightness controls. Confirm **B+ 140 ± 2.0V** with 120V AC applied.

Purity and Convergence Procedure

Adjustment is necessary only if the CRT or the deflection yoke is replaced or if the setting was disturbed. The complete procedure consists of:

1. Vertical Raster Shift Adjustment. (**Only for Models with Purity/Convergence Assembly with 4 Pairs of Rings**).
2. Initial static convergence.
3. Setting the purity.
4. Final static convergence.

When the CRT or the Yoke is Replaced

Place the yoke on the CRT neck (do not tighten the clamp).

For a 2-piece assembly (see Fig. 2):

Position purity/convergence assembly as shown and tighten clamp snugly. Remove the hot-melt glue seal on assembly and position like tabs of purity device together at 12 o'clock to reduce its magnetic field effect.

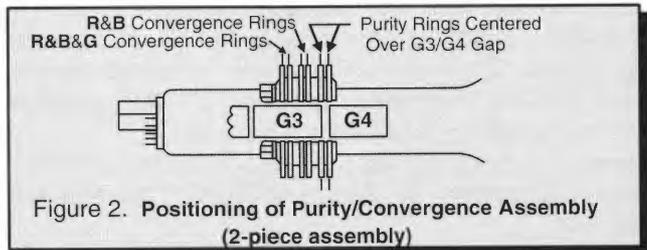


Figure 2. Positioning of Purity/Convergence Assembly (2-piece assembly)

For models using 4 pairs of rings, place the vertical raster shift tabs at 3 o'clock (90° from the purity and convergence tabs, see Fig. 3 and Fig. 4)

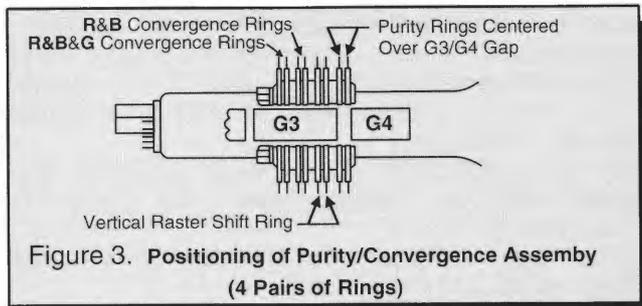


Figure 3. Positioning of Purity/Convergence Assembly (4 Pairs of Rings)

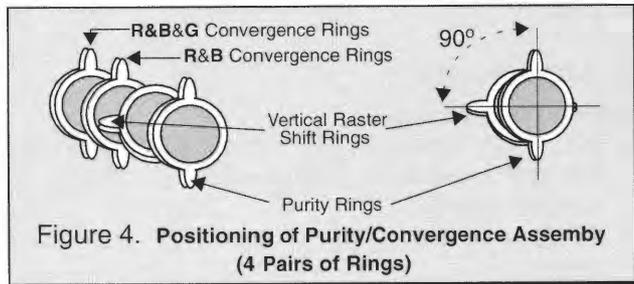


Figure 4. Positioning of Purity/Convergence Assembly (4 Pairs of Rings)

For a 1-piece assembly (see Fig. 5):

Position like tabs of purity devices together at 12 o'clock to reduce any magnetic field effect. (For better results, note part number and look for specifications at Service Center)

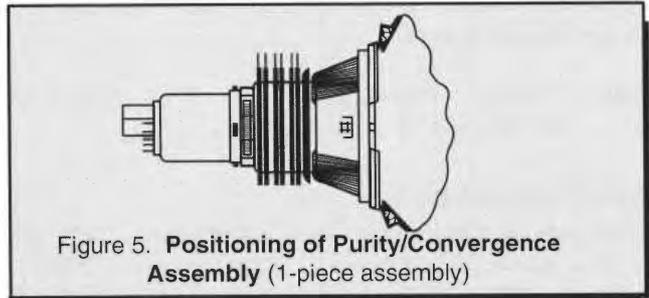


Figure 5. Positioning of Purity/Convergence Assembly (1-piece assembly)

For either assemblies:

Turn the Receiver ON. Operate the Receiver for 60 minutes using the first Purity Check field (white screen) to stabilize the CRT.

Fully degauss the Receiver by using an external degaussing coil.

Slide the deflection yoke back and forth on the neck of the CRT until it produces a near white, uniform raster.

Vertical Raster Shift Adjustment (Only for Models with Purity/Convergence Assembly with 4 Pairs of Rings).

Apply a green pattern with a horizontal line, adjust the Deflection Yoke so that has no tilt, then secure it. Adjust center line of the pattern with the mechanical center of the CRT, this center is determined by two marks at the side edges of the screen. To adjust the line, once the vertical raster shift tabs are place at 3 o'clock to reduce its magnetic field effect (see Fig. 3 and Fig. 4) open the tabs the same angle from the center, until the center line of the pattern becomes a straight line, centered with the marks of the CRT. (see Fig. 6)

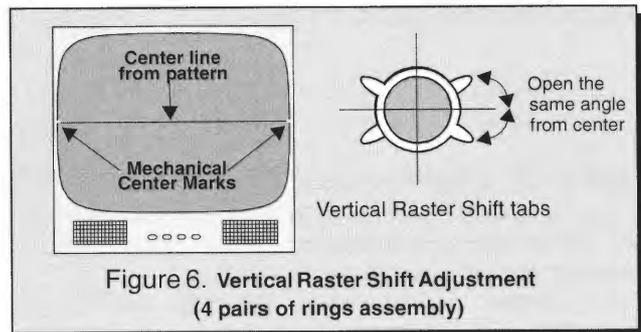


Figure 6. Vertical Raster Shift Adjustment (4 pairs of rings assembly)

Initial Center Static Convergence

Connect a dot/cross hatch generator to the Receiver and tune in a signal. Observe misconvergence at center of the screen only.

Adjust the R&B pole magnets; by separating tabs and rotating to converge blue with red.

Adjust the R&B and R&B&G pole magnets: by separateing tabs and rotating to converge blue and red (magenta) with green.

Note: *Precise convergence at this point is not important.*

Purity Adjustment

When the Receiver is in the Serviceman Mode for making electronic adjustments, press the **Recall** button on the Remote Control to enter Purity Check. (See the **Service Adjustments Electronic Controls** procedure).

Operate the Receiver for 60 minutes using the first Purity Check field (white screen) to stabilize the CRT.

Fully degauss the Receiver by using an external degaussing coil.

Press the **Recall** button on the Remote Control again until the Purity Check (green screen) appears.

For a 2-piece assembly (see Fig. 2):

Loosen the deflection yoke clamp screw and move the deflection yoke back as close to the purity magnet as possible.

Adjust the Purity rings to set the vertical green raster precisely at the center of the screen (see Fig. 7).



Slowly move the deflection yoke forward until the best overall green screen is displayed.

Permalloy Convergence Corrector Strip (Part No. 0FMK014ZZ)

This strip is used in some sets to match the yoke and CRT for optimum convergence. If the yoke or CRT is replaced, the strip may not be required.

First converge the set without the strip and observe the corners.

For a 1-piece assembly (see Fig. 5):

Slowly move the deflection yoke and purity rings assembly toward the CRT board and adjust the purity magnet rings to set vertical green raster at center of screen (see Fig. 7).

Gradually move the deflection yoke & purity rings forward and adjust for best overall green screen.

Continue from here for either assemblies:

Tighten the deflection yoke clamp screw.

Press the **Recall** button on the Remote Control again until the purity check (blue screen) and (red screen) appear and observe that good purity is obtained on each respective field.

Press the **Recall** button on the Remote Control again until Purity check (white screen) appears. Observe the screen for uniform white. If purity has not been achieved, repeat the above procedure.

Final Convergence Procedure (see Fig. 8 through Fig. 10):

Note: *Vertical size and focus adjustments must be completed prior to performing the convergence adjustment. Connect a dot pattern generator to the Receiver. The **Brightness** level should not be higher than necessary to obtain a clear pattern.*

Converge the red and the blue dots at the center of the screen by rotating the R&B pole Static Convergence Magnets.

Align The converged red/blue dots with the green dots at the center of the screen by rotating the R&B&G pole Static Convergence Magnets. Melt wax with soldering iron to reseal the magnets.

Slightly tilt vertically and horizontally (do not rotate) the deflection yoke to obtain a good overall convergence.

If convergence is not reached at the edges, insert permalloy (see following section) from the DY corners to achieve proper convergence. Recheck for purity and readjust if necessary.

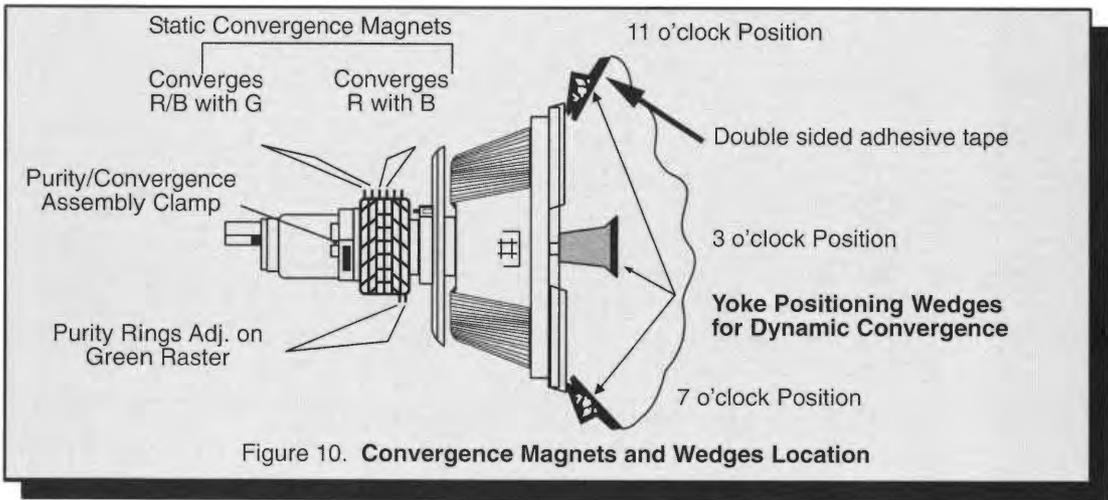
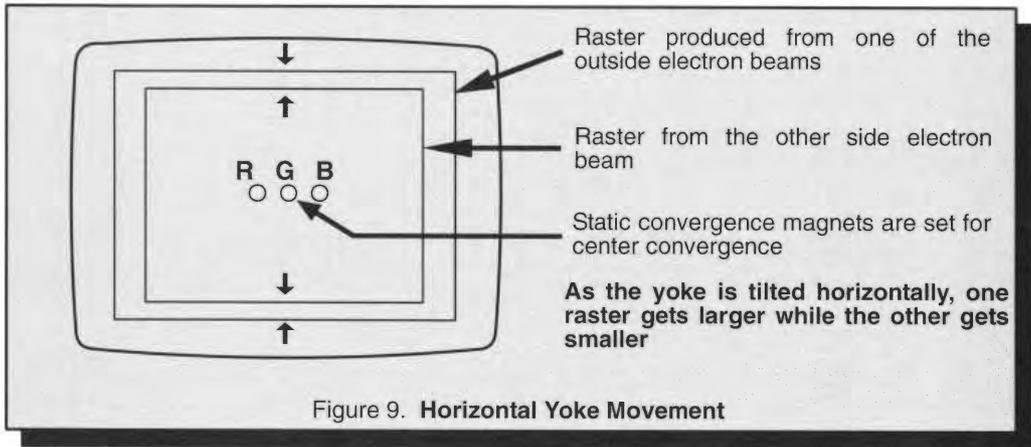
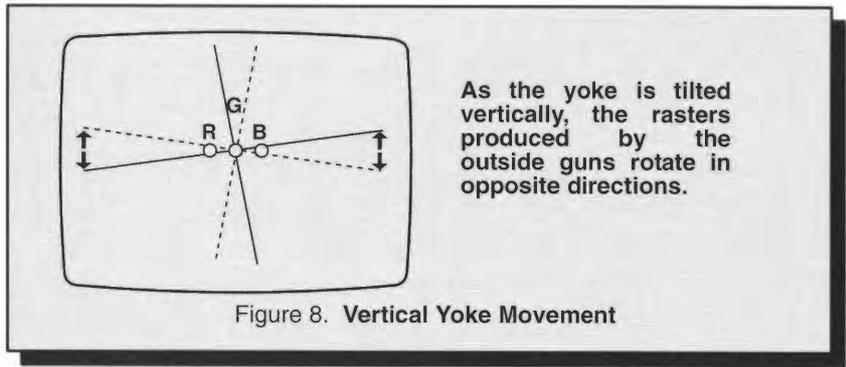
After vertical adjustment of the yoke, insert wedge at 11 o'clock position, then make the horizontal tilt adjustment.

Secure the deflection yoke by inserting two side wedges at 3 and 7 o'clock positions.

Apply adhesive between tab (thin portion) of wedge and CRT and place tape over the tab to secure to the CRT.

If correction is needed:

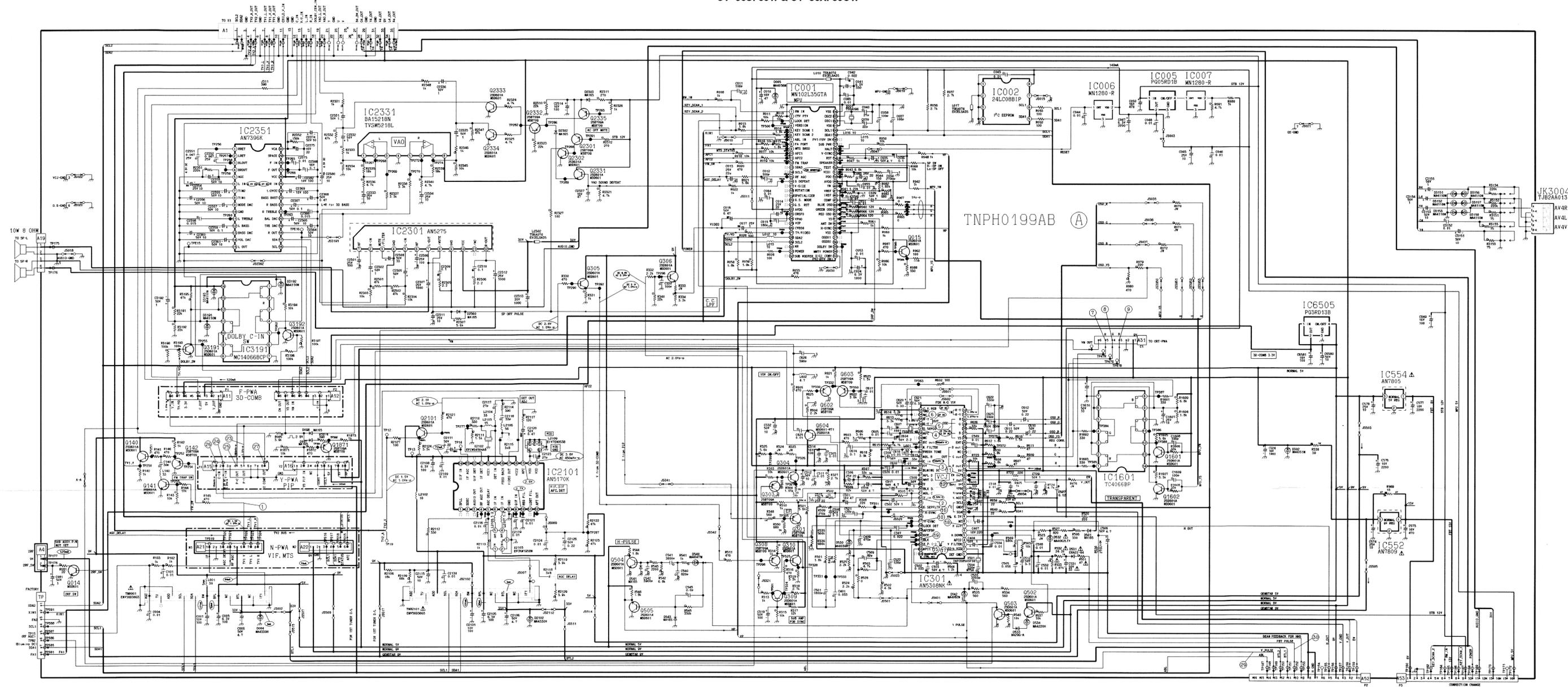
1. Place strip between CRT and yoke, in quadrant needing correction. Slowly move it around for desired results.
2. Press adhesive tightly to the CRT and secure with tape.



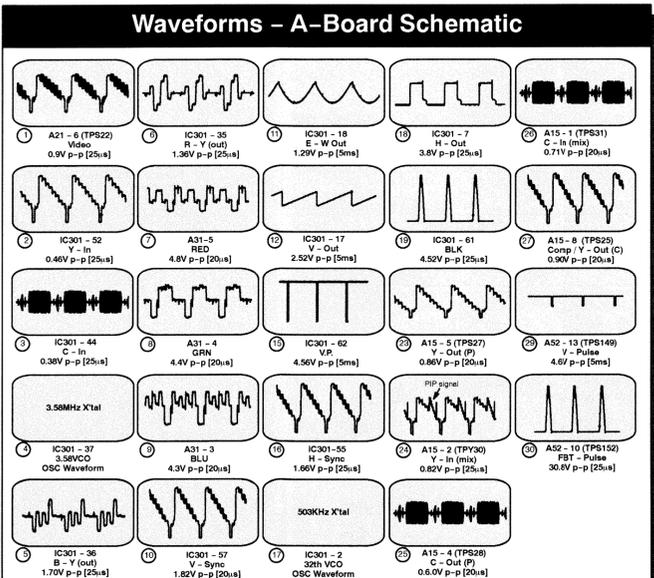
Note: For models using 4 pairs of rings assemblies see Fig. 3 for details

Notes:

A-Board Schematic
CT-36SF35W & CT-36XF35CW



Sheet 1 of 5
Side A



A-Board Voltages

IC001			IC301			IC002			IC2101			IC2351			Q14		
01	4.90	33	0.00	01	0.00	33	0.00	01	0.00	13	3.50	01	4.30	16	2.70	B	Q101
02	0.00	34	0.00	02	0.00	34	0.00	02	2.00	14	3.50	02	4.30	17	2.70	C	Q111
03	4.90	35	4.90	03	0.60	35	2.80	03	2.50	15	2.70	03	4.30	18	4.30	E	Q121
04	0.00	36	4.90	04	1.90	36	2.70	04	3.00	16	4.80	04	4.30	19	4.30		Q161
05	4.90	37	0.00	05	2.20	37	2.20	05	0.00	17	1.90	05	1.50	20	2.50		Q112
06	2.60	38	0.00	06	5.90	38	2.60	06	4.10	18	1.90	06	4.30	21	4.30		Q122
07	0.00	39	4.10	07	0.10	39	0.00	07	0.00	19	1.80	07	0.80	22	4.30		Q142
08	4.90	40	4.00	08	0.00	40	3.30	08	2.50	20	1.80	08	0.80	23	4.30		Q162
09	1.20	41	0.00	09	0.00	41	4.90	09	0.00	21	1.80	09	0.70	24	4.30		Q181
10	2.30	42	0.00	10	4.10	42	3.40	10	2.50	22	2.20	10	0.00	25	4.30		Q201
11	2.30	43	0.00	11	0.00	43	2.90	11	1.10	23	2.20	11	4.30	26	8.70		Q231
12	0.00	44	0.00	12	4.00	44	2.00	12	2.60	24	2.00	12	4.30	27	4.30		Q301
13	0.00	45	3.50	13	2.30	45	5.10	13	0.00	25	2.00	13	1.60	28	4.30		Q302
14	0.00	46	1.40	14	1.20	46	2.20	14	2.30	26	2.00	14	3.80	29	1.70		Q303
15	2.30	47	1.40	15	0.40	47	0.40	15	4.90	27	4.30	15	4.30	30	1.70		
16	0.00	48	0.00	16	2.80	48	3.10	16	0.00	28	4.80						
17	2.40	49	4.90	17	2.80	49	5.00	17	0.00	29	4.80						
18	0.00	50	1.30	18	4.80	50	3.90	18	5.20	30	4.80						
19	4.90	51	1.30	19	8.70	51	3.20	19	0.00								
20	0.00	52	4.90	20	2.80	52	3.50	20	4.90								
21	0.00	53	4.90	21	2.70	53	0.00	21	0.00								
22	4.90	54	4.90	22	2.80	54	2.80	22	0.00								
23	0.00	55	4.10	23	0.00	55	1.90	23	4.90								
24	2.30	56	4.90	24	2.70	56	0.00	24	0.00								
25	1.30	57	0.00	25	0.00	57	1.90	25	0.00								
26	2.00	58	0.00	26	0.00	58	5.60	26	0.00								
27	0.00	59	4.10	27	2.60	59	0.20	27	0.00								
28	2.80	60	4.00	28	0.40	60	1.00	28	0.00								
29	2.70	61	4.90	29	2.60	61	0.20	29	0.00								
30	0.00	62	2.50	30	0.00	62	4.10	30	0.00								
31	4.70	63	2.60	31	3.80	63	4.10	31	0.00								
32	0.00	64	0.00	32	3.90	64	1.80	32	0.00								

IC005			IC1601			IC2301			IC2331			IC3191			Q15		
01	11.80		01	2.80	01	1.10	01	4.30	01	4.30	B	Q202					
02	4.90		02	1.80	02	0.00	02	4.30	02	4.30	C	Q212					
03	0.00		03	1.80	03	30.60	03	4.30	03	4.30	E	Q232					
04	5.20		04	2.80	04	0.00	04	4.30	04	4.30		Q233					
			05	0.50	05	0.00	05	4.30	05	4.30		Q304					
			06	0.20	06	1.10	06	4.30	06	4.30		Q305					
			07	0.00	07	14.90	07	4.30	07	4.30		Q306					
			08	2.70	08	4.90	08	4.30	08	4.30		Q308					
			09	1.80	09	0.00	09	4.30	09	4.30		Q309					
			10	0.00	10	31.10	10	4.30	10	4.30		Q310					
			11	0.20	11	0.00	11	4.30	11	4.30							
			12	8.70	12	15.00	12	8.70	12	4.30							
			13	0.90			13	4.30	13	4.30							
			14	8.70			14	4.30	14	4.30							

IC006			IC007			IC552			IC554			Q16		
01	4.90		01	0.00	01	12.70	B	Q302						
02	4.90		02	5.20	02	0.00	C	Q312						
03	0.00		03	5.20	03	8.80	E	Q332						

Q2332			Q2333			Q2334			Q2335			Q301		
B	0.00	0.00	B	0.00										
C	0.00	0.00	C	0.00										
E	0.00	0.00	E	0.00										

Q602			Q603			Q604		
B	1.00	3.40	B	1.00	3.30	B	1.00	3.30
C	0.00	4.80	C	0.00	4.80	C	0.00	4.80
E	1.60	1.60	E	1.60	2.60	E	1.60	2.60

Q554		
B	8.10	
C	0.00	
E	4.90	

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A-Board Schematic
CT-36SF35W & CT-36XF35CW

MTC80671C1

1

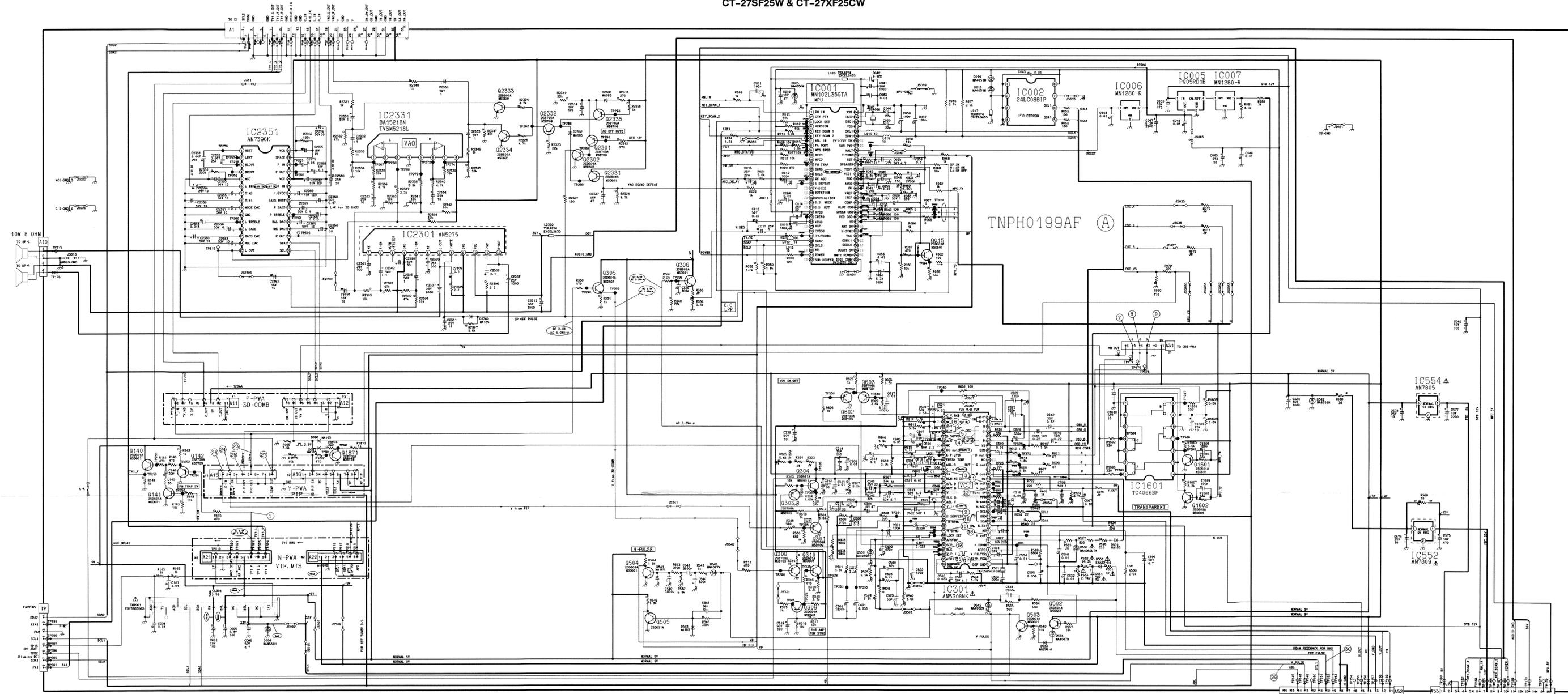
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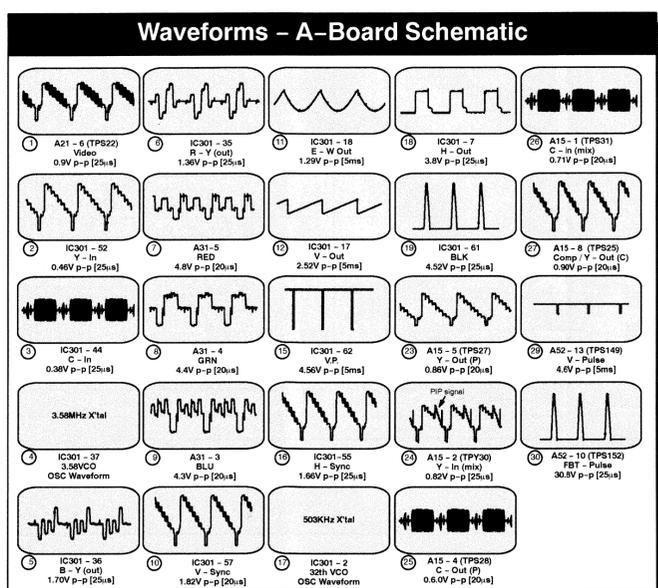
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A-Board Schematic
CT-27SF25W & CT-27XF25CW

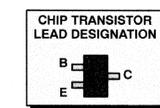


Sheet 2 of 5
Side A



A-Board Voltages

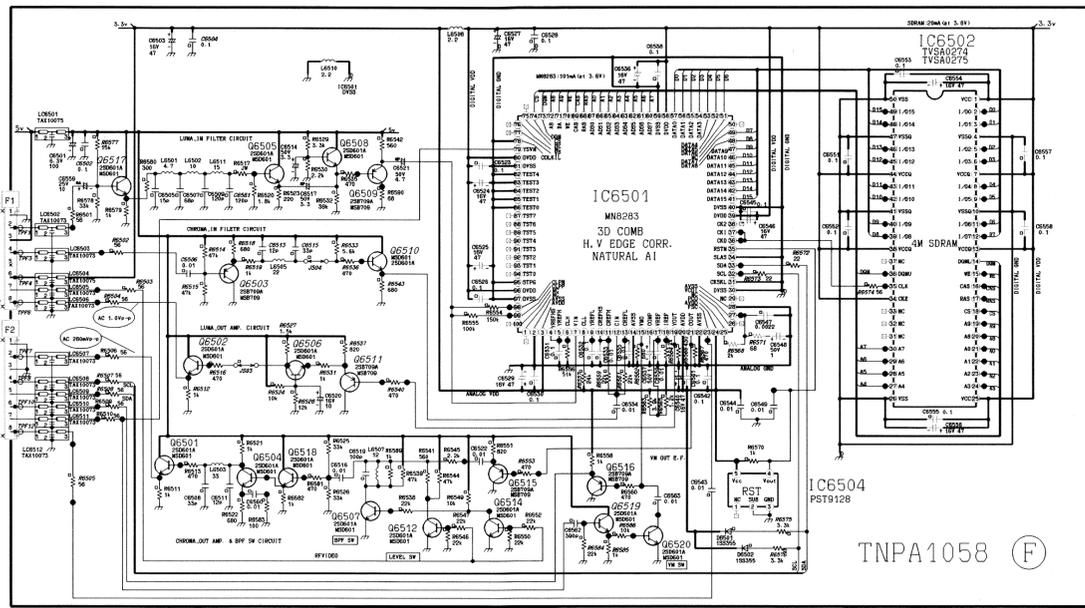
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01	4.90	33	0.00	01	0.00	33	0.00	01	0.00	01	2.80	01	1.10	01	4.30	01	4.30	B	0.00	Q140	1.40	Q160	0.00
02	0.00	34	0.00	02	1.30	34	0.00	02	0.00	02	1.80	02	0.00	02	4.30	02	4.30	C	4.90	Q141	0.23	Q161	8.70
03	2.90	35	4.90	03	0.60	35	2.80	03	0.00	03	30.60	03	30.60	03	4.30	03	4.30	E	0.00	Q142	0.00	Q162	0.20
04	0.00	36	4.90	04	1.90	36	2.70	04	0.00	04	2.80	04	0.00	04	4.30	04	4.30			Q143	2.00		8.70
05	4.90	37	0.00	05	2.20	37	2.20	05	4.10	05	0.30	05	0.00	05	1.50	05	1.50			Q144	0.00		0.00
06	2.60	38	0.00	06	5.90	38	2.60	06	4.10	06	0.20	06	1.10	06	4.30	06	4.30			Q145	0.00		0.00
07	0.00	39	4.10	07	0.10	39	0.00	07	0.00	07	0.00	07	14.90	07	4.80	07	4.80			Q146	0.00		-0.10
08	4.90	40	4.00	08	0.30	40	3.30	08	0.00	08	2.70	08	4.90	08	0.80	08	0.80			Q147	11.80		0.00
09	1.20	41	0.00	09	6.30	41	4.80	09	4.90	09	0.00	09	0.70	09	4.30	09	4.30			Q148	0.00		0.00
10	2.30	42	0.00	10	4.10	42	3.40	10	0.00	10	0.00	10	31.10	10	0.00	10	0.00			Q149	0.00		0.00
11	2.30	43	0.00	11	0.00	43	2.90	11	0.20	11	0.20	11	0.00	11	4.30	11	4.30			Q150	0.00		0.00
12	0.00	44	0.00	12	4.00	44	2.00	12	8.70	12	8.70	12	4.30	12	4.30	12	4.30			Q151	0.40		2.70
13	0.00	45	3.50	13	2.30	45	5.10	13	0.30	13	0.30	13	1.60	13	4.30	13	1.60			Q152	0.00		2.20
14	0.00	46	1.40	14	1.20	46	2.20	14	0.00	14	0.00	14	3.80	14	2.80	14	3.80			Q153	1.00		8.70
15	2.30	47	1.40	15	0.40	47	0.40	15	5.20	15	5.20	15	4.30	15	1.70	15	4.30			Q154	1.00		2.10
16	0.00	48	0.00	16	8.70	48	3.10													Q155	1.50		0.40
17	2.40	49	4.90	17	2.80	49	5.00													Q156	0.00		0.00
18	0.00	50	1.30	18	4.80	50	3.90													Q157	2.10		0.00
19	4.90	51	1.30	19	8.70	51	3.20													Q158	0.00		0.00
20	0.00	52	4.90	20	2.80	52	3.50													Q159	4.00		0.00
21	0.00	53	4.90	21	2.70	53	0.00													Q160	7.10		2.20
22	4.90	54	4.90	22	2.80	54	2.80													Q161	3.40		8.70
23	0.00	55	4.10	23	0.00	55	1.90													Q162	0.00		0.00
24	2.30	56	4.90	24	2.70	56	0.00																
25	1.30	57	0.00	25	0.00	57	1.90																
26	2.00	58	0.00	26	0.00	58	5.60																
27	0.00	59	4.10	27	2.60	59	0.20																
28	2.80	60	4.00	28	0.40	60	1.00																
29	2.70	61	4.90	29	2.60	61	0.20																
30	0.00	62	2.50	30	2.70	62	4.10																
31	4.70	63	2.60	31	3.80	63	4.10																
32	0.00	64	0.00	32	3.90	64	1.80																



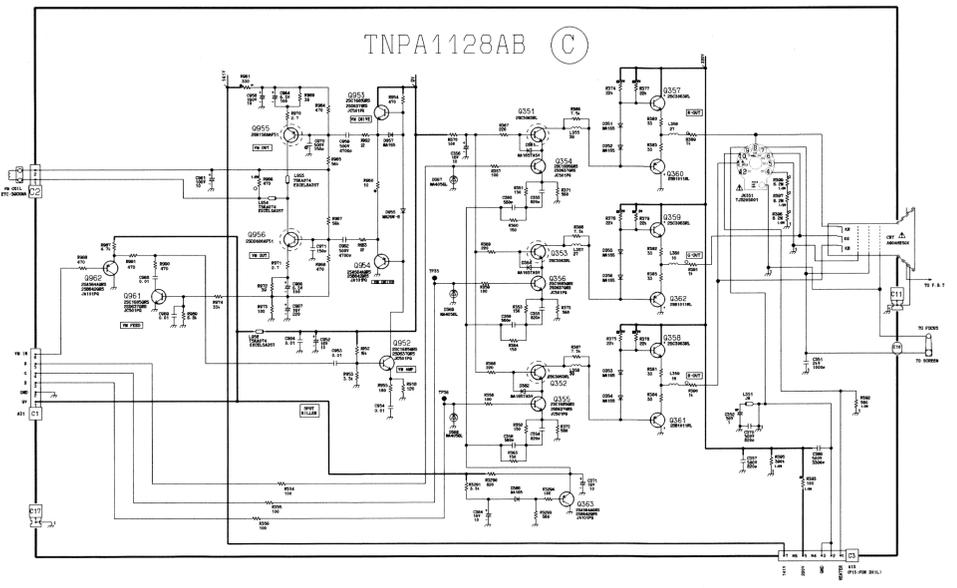
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CT-27SF25W & CT-27XF25CW
CT-27SF35W, CT-36XF35CW, CT-27XF35CW, CT-27SF25W, & CT-27XF25CW

F-Board Schematic
CT-36SF35W, CT-36XF35CW, CT-27SF35W, & CT-27XF35CW



C-Board Schematic
CT-36SF35W & CT-36XF35CW



C-Board Voltages

Q351	Q352	Q353	Q354
B 8.70	8.70	8.70	2.80
C 153.90	161.60	160.50	8.20
E 8.20	8.20	8.10	2.50
Q355	Q356	Q357	Q358
B 2.70	2.80	155.00	162.80
C 8.20	8.20	211.40	211.50
E 2.40	2.40	154.70	162.50
Q359	Q360	Q361	Q362
B 161.70	153.90	153.90	161.40
C 211.40	0.00	0.00	0.00
E 161.20	154.80	154.80	162.40
Q363	Q952	Q953	Q954
B 1.20	8.70	6.00	-4.70
C 0.00	161.60	8.70	0.00
E 1.90	8.20	5.40	5.30
Q955	Q956	Q961	Q962
B 133.70	0.90	0.10	1.30
C 69.00	68.40	0.00	0.00
E 134.10	0.50	0.00	2.00

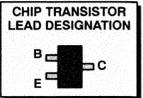
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F-Board Voltages

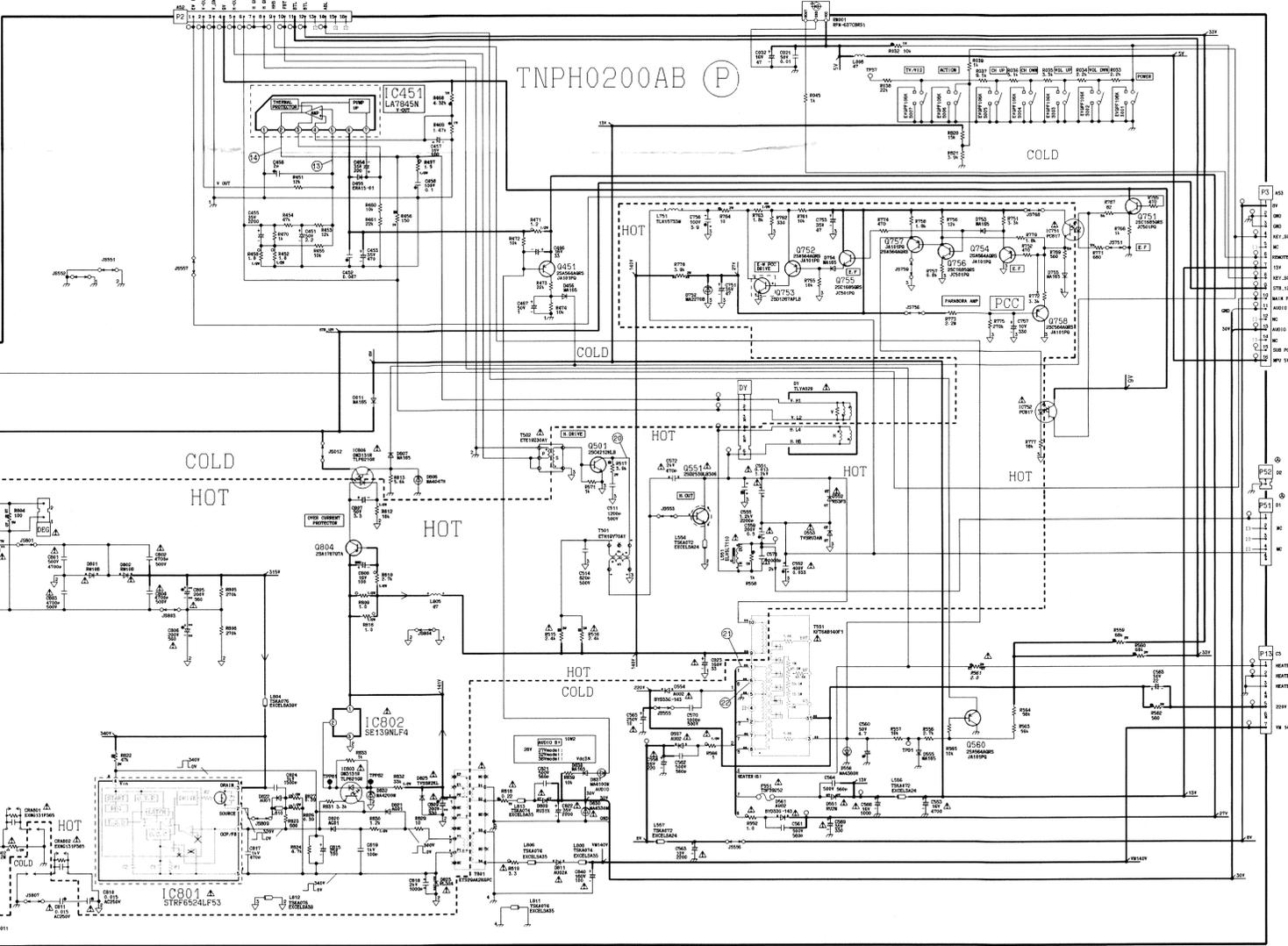
IC6501		IC6502		IC6504	
01	0.00	51	1.60	01	0.00
02	0.00	52	2.00	02	0.00
03	3.20	53	1.10	03	0.00
04	2.50	54	1.30	04	3.20
05	2.50	55	1.50	05	3.20
06	2.00	56	1.80		
07	1.40	57	2.20		
08	1.20	58	3.20		
09	0.60	59	0.00		
10	2.50	60	1.20		
11	2.50	61	1.20		
12	1.50	62	1.20		
13	0.60	63	1.20		
14	0.00	64	1.20		
15	0.70	65	1.20		
16	2.20	66	1.20		
17	0.80	67	0.40		
18	0.70	68	1.60		
19	0.40	69	0.80		
20	3.20	70	1.70		
21	0.50	71	1.50		
22	0.00	72	0.40		
23	1.50	73	0.40		
24	3.20	74	1.90		
25	1.40	75	2.70		
26	0.00	76	0.00		
27	1.40	77	3.20		
28	0.00	78	0.00		
29	0.00	79	0.20		
30	0.00	80	3.20		
31	0.00	81	0.00		
32	0.00	82	0.00		
33	2.70	83	0.00		
34	0.00	84	0.00		
35	3.20	85	0.00		
36	1.40	86	0.00		
37	1.40	87	0.00		
38	1.50	88	0.00		
39	3.20	89	0.00		
40	0.00	90	0.00		
41	1.10	91	0.00		
42	1.70	92	0.00		
43	1.20	93	0.00		
44	1.00	94	0.00		
45	1.40	95	0.00		
46	1.50	96	3.20		
47	1.50	97	0.00		
48	1.50	98	1.30		
49	1.00	99	1.30		
50	0.00	100	0.00		

P-Board Voltages

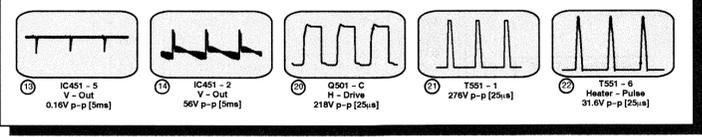
IC451		Q001		Q451		Q501		Q511		Q600	
01	0.00	B	0.70	26	10.00	0.00	-0.10	5.60			
02	12.00	C	0.10	0.00	98.20	158.00	0.00	0.00			
03	26.10	E	0.00	26.60	0.00	0.00	3.20				
04	2.10										
05	2.10										
06	26.20										
07	1.20										



P-Board Schematic
CT-36SF35W & CT-36XF35CW

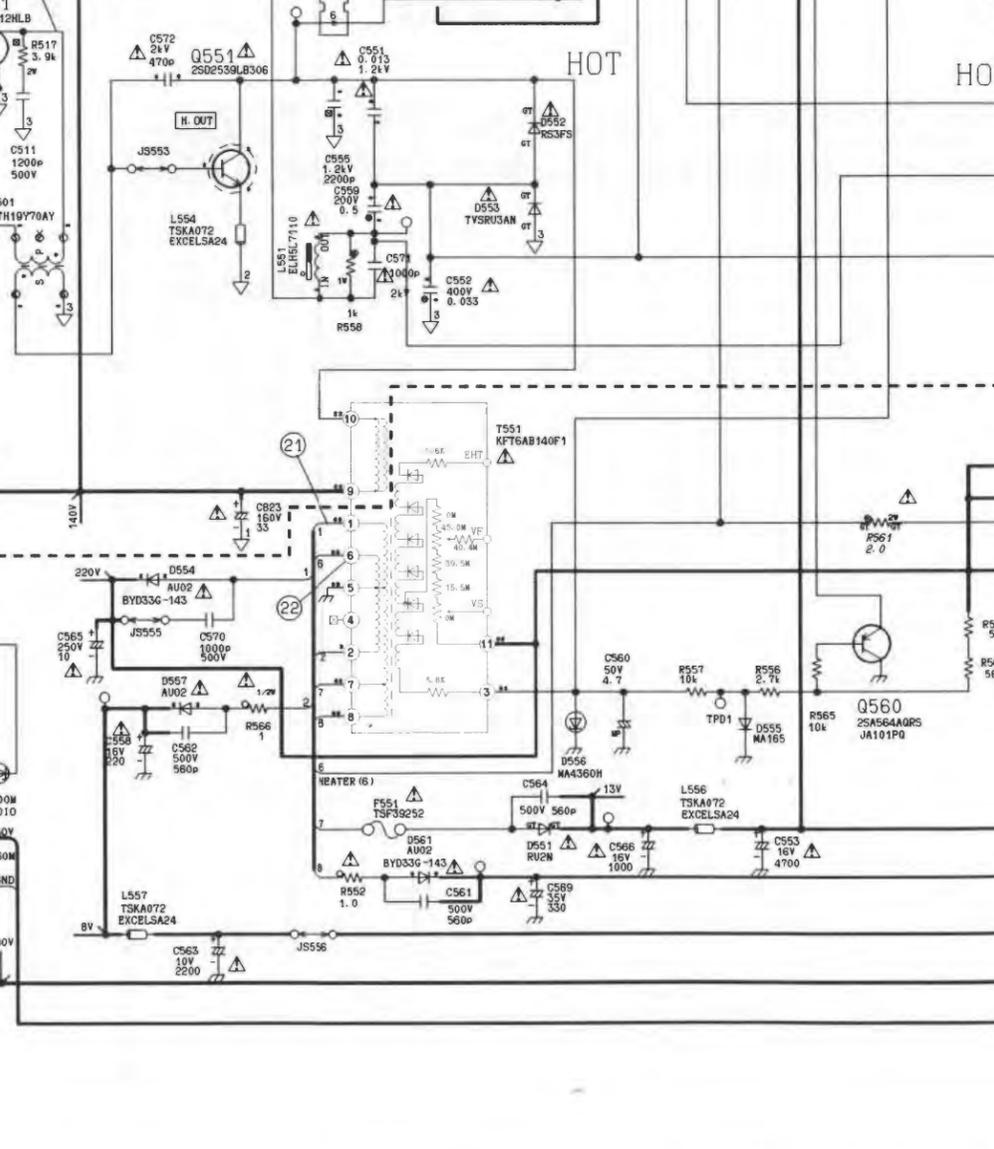
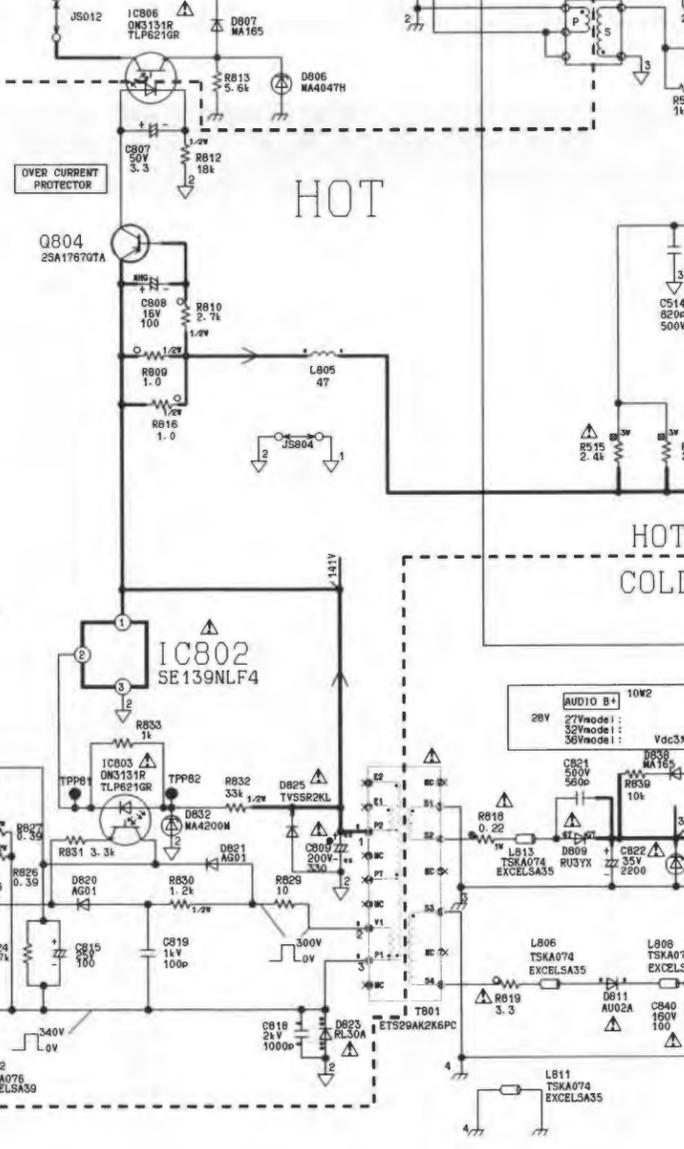
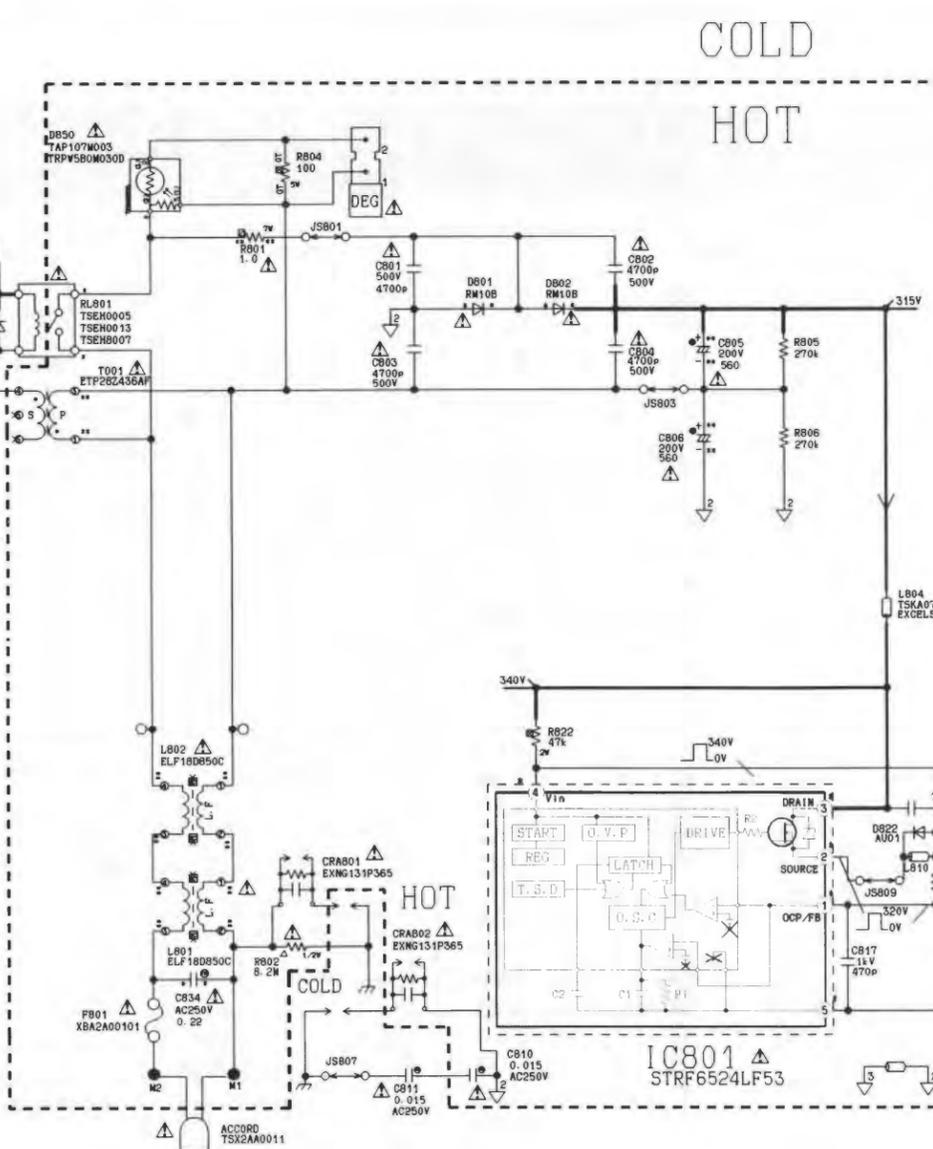
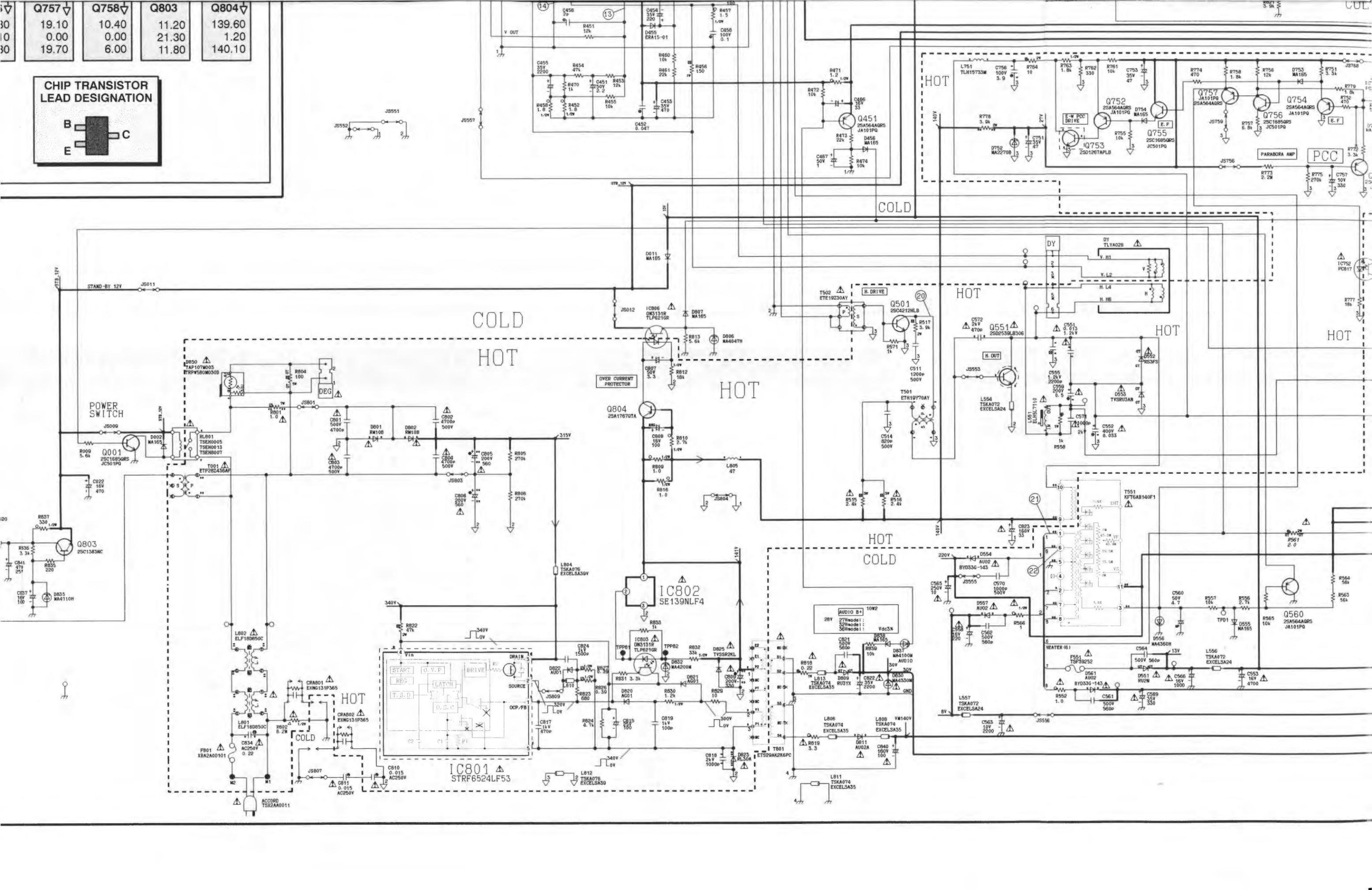
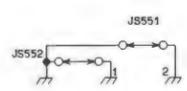
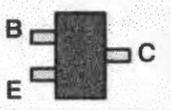


Waveforms - P-Board Schematic



Q757	Q758	Q803	Q804
19.10	10.40	11.20	139.60
0.00	0.00	21.30	1.20
19.70	6.00	11.80	140.10

**CHIP TRANSISTOR
LEAD DESIGNATION**



A

B

C

D

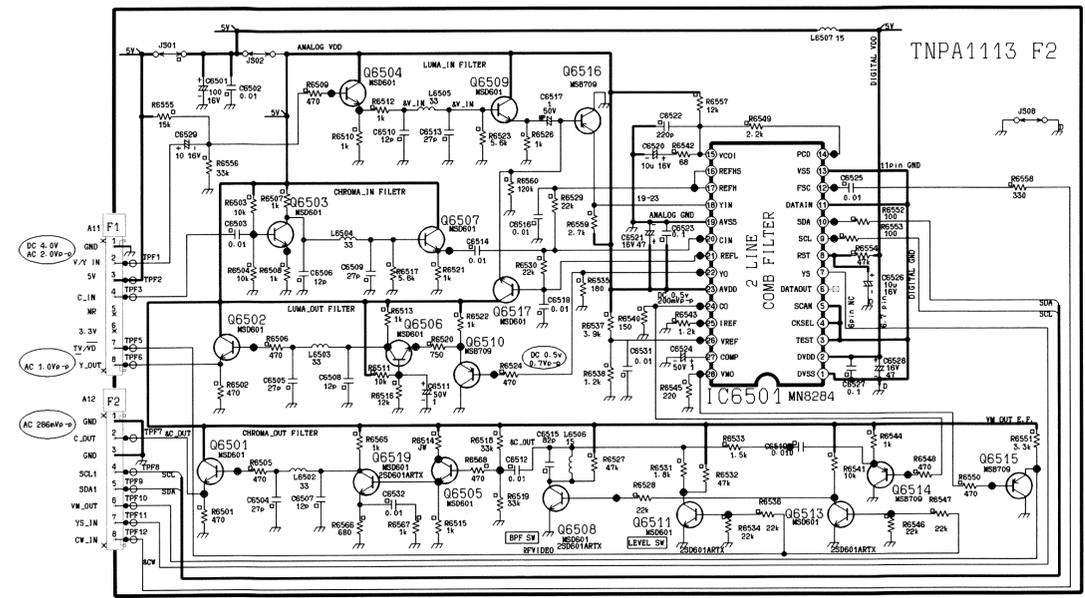
E

F

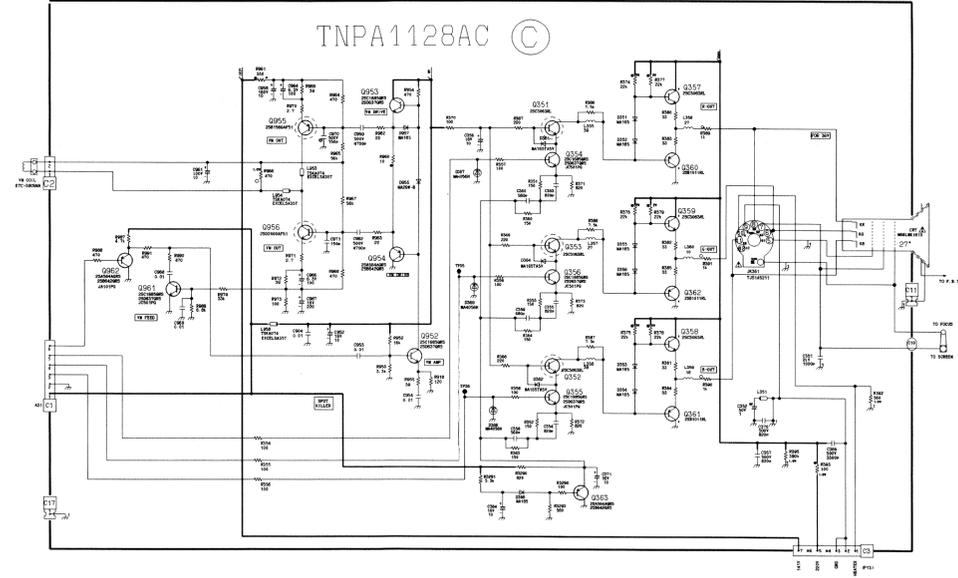
G

H

F-Board Schematic CT-27SF25W & CT-27XF25CW



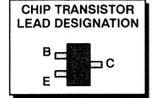
C-Board Schematic CT-27SF35W, CT-27XF35CW, CT-27SF25W, & CT-27XF25CW



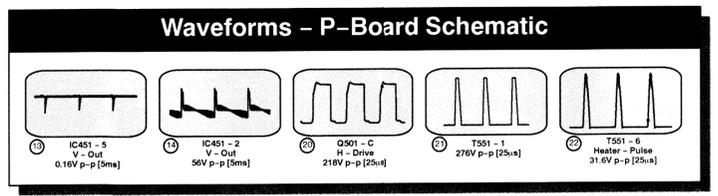
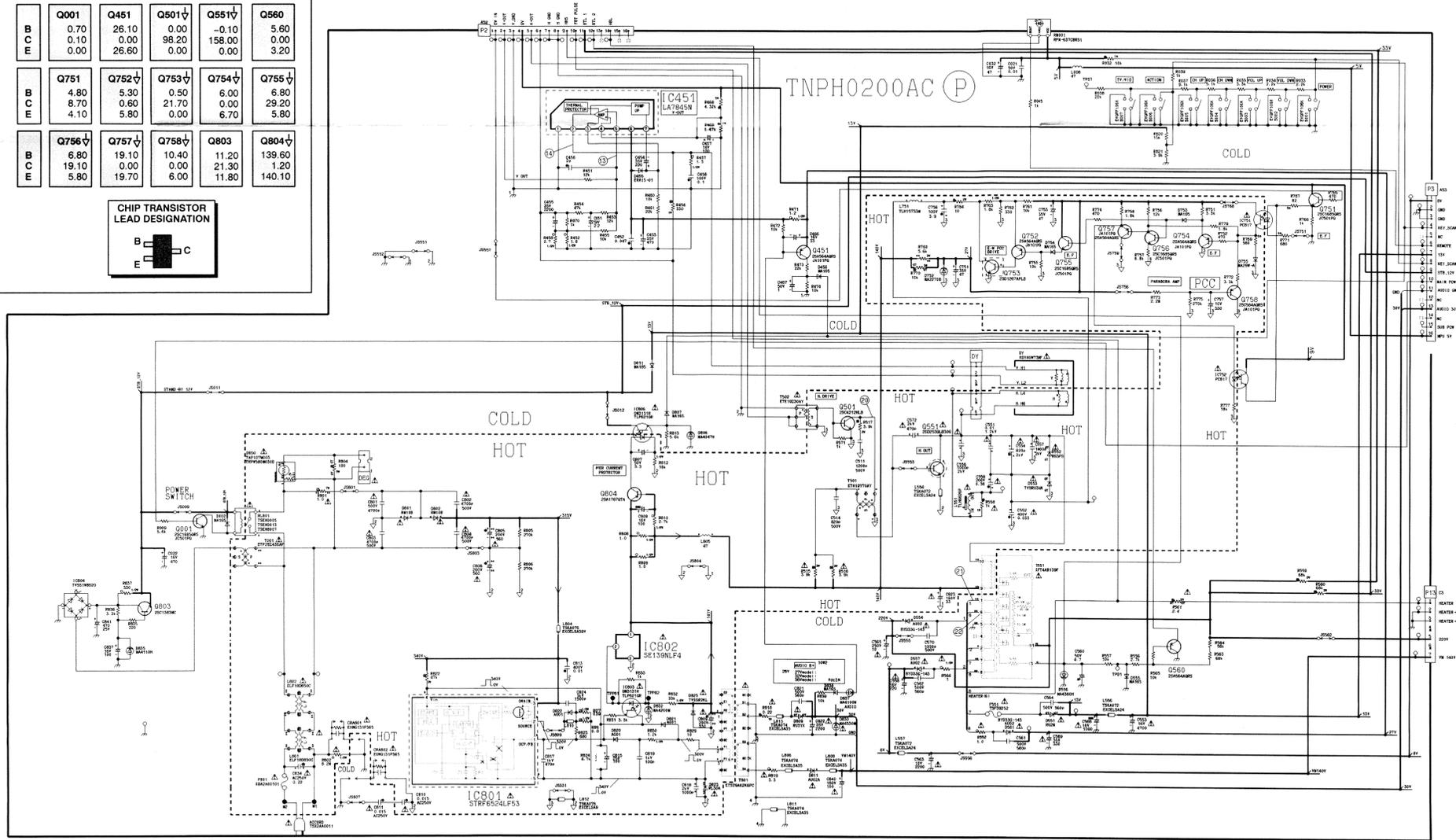
C-Board Voltages				
	Q351	Q352	Q353	Q354
B	8.70	8.70	8.70	2.80
C	153.90	161.60	160.50	8.20
E	8.20	8.20	8.10	2.50
	Q355	Q356	Q357	Q358
B	2.70	2.80	155.00	162.80
C	8.20	8.20	211.40	211.50
E	2.40	2.40	154.70	162.50
	Q359	Q360	Q361	Q362
B	161.70	153.90	153.90	161.40
C	211.40	0.00	0.00	211.40
E	161.20	154.80	154.80	162.40
	Q363	Q362	Q363	Q362
B	1.20	8.70	6.00	-4.70
C	0.00	161.60	8.70	0.00
E	1.90	8.20	5.40	5.30
	Q365	Q366	Q361	Q362
B	133.70	0.90	0.10	1.30
C	58.00	68.40	0.00	0.00
E	134.10	0.50	0.00	2.00

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P-Board Voltages					
	IC451	Q001	Q451	Q501	Q560
01	0.00	0.70	26.10	0.00	5.60
02	12.00	0.10	0.00	-0.10	0.00
03	26.10	0.00	26.60	98.20	158.00
04	2.10			0.00	3.20
05	2.10				
06	26.20				
07	1.20				
	IC801	Q751	Q752	Q753	Q754
01	150.60	4.80	5.30	0.50	6.80
02	144.20	8.70	0.60	21.70	6.00
03	277.40	4.10	5.80	0.00	29.20
04	161.70			6.00	5.80
05	144.10				
	IC802	Q756	Q757	Q758	Q803
01	140.10	6.80	19.10	10.40	11.20
02	19.20	19.10	0.00	0.00	21.30
03	0.00	5.80	19.70	6.00	11.80
04					
05					



P-Board Schematic CT-27SF35W, CT-27XF35CW, CT-27SF25W, & CT-27XF25CW



1

2

3

4

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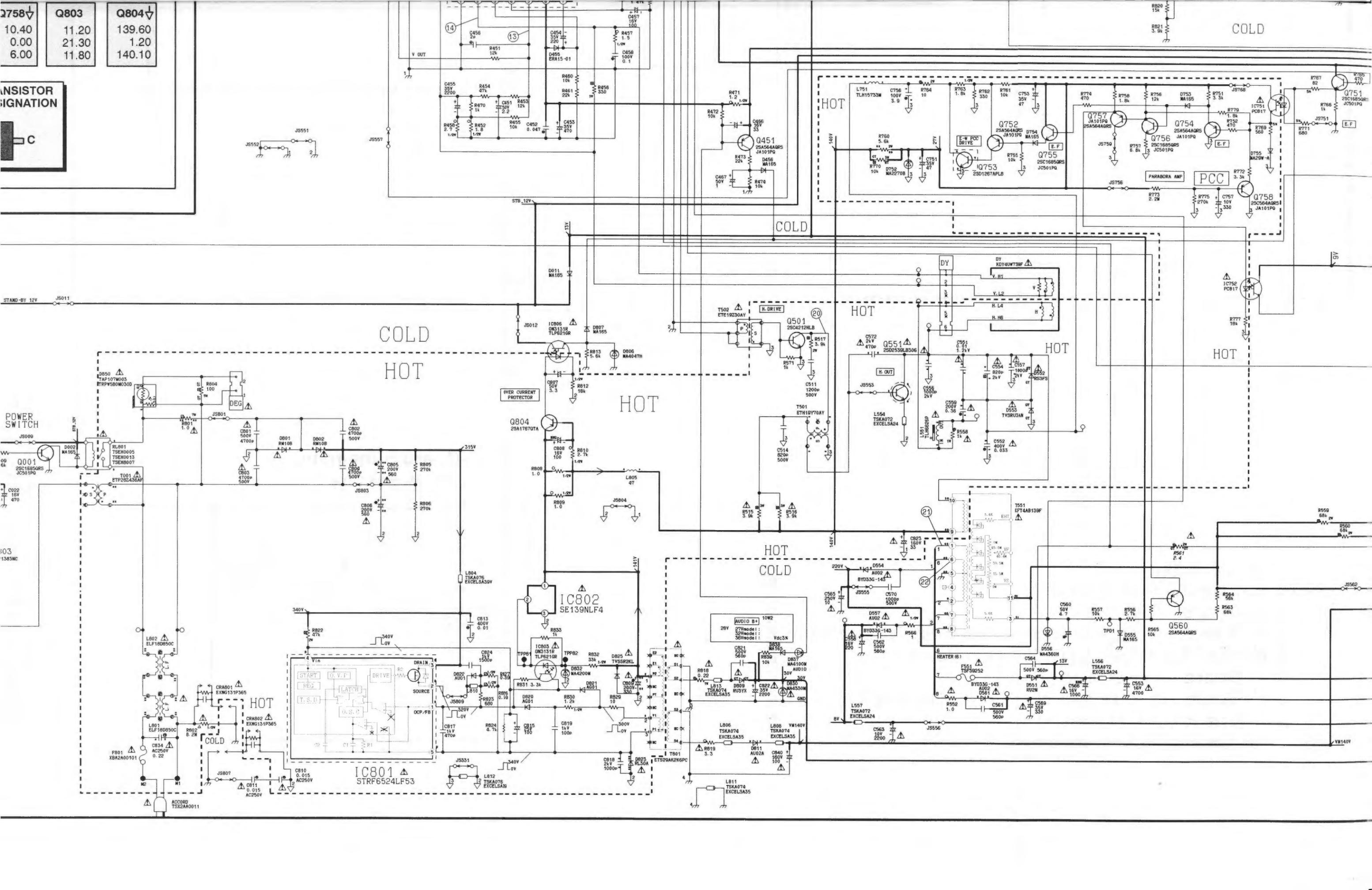
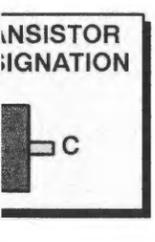
MTC980771C1

Sheet 3 of 5
Side A

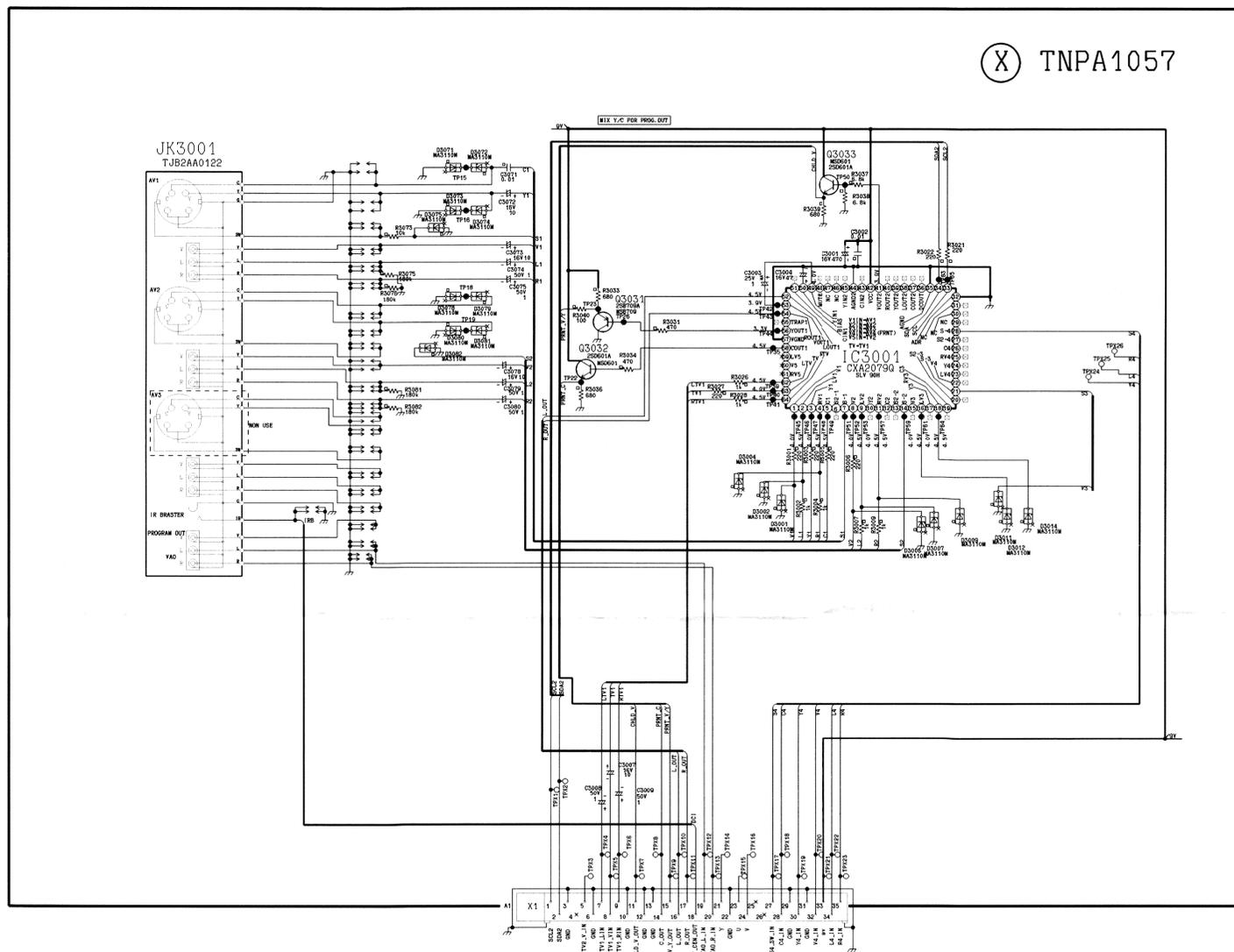
C, F, & P-Board
Schematics

CT-27SF35W, CT-27XF35CW, CT-27SF25W, CT-27XF25CW

Q758	Q803	Q804
10.40	11.20	139.60
0.00	21.30	1.20
6.00	11.80	140.10



X-Board Schematic
CT-27SF25W & CT-27XF25CW

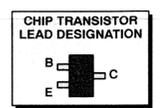


X-Board Voltages

IC3001	
01	3.80
02	4.30
03	3.80
04	4.30
05	4.30
06	0.10
07	4.70
08	3.80
09	4.30
10	3.80
11	4.30
12	4.30
13	0.10
14	4.70
15	3.80
16	4.30
17	3.80
18	4.30
19	4.30
20	0.10
21	4.70
22	3.80
23	4.30
24	3.80
25	4.30
26	4.30
27	0.10
28	4.70
29	0.00
30	0.00
31	0.00
32	0.00
33	2.70
34	2.80
35	0.00
36	4.30
37	4.20
38	4.30
39	3.10
40	4.30
41	4.20
42	8.70
43	4.30
44	0.00
45	3.90
46	0.00
47	0.00
48	0.00
49	4.60
50	4.30
51	4.30
52	4.30
53	4.10
54	4.30
55	3.50
56	3.90
57	0.00
58	4.20
59	4.30
60	4.10
61	4.30
62	4.30
63	4.10
64	4.30

	Q3031	Q3032	Q3033
B	3.90	4.20	2.00
C	0.00	8.70	8.70
E	4.60	3.50	1.40

	Q3051	Q3052	Q3053
B	6.40	1.80	4.60
C	8.70	4.60	0.00
E	5.80	1.20	5.30



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Waveform Measurements

- Indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
- Taken with a NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black)
- Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to 'MIN'.
- All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak amplitudes may vary depending on the type of Oscilloscope used and its settings.
- Ground symbol \downarrow shown on waveform number indicates (POT) ground lead connection of the Oscilloscope. **CAUTION:** Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections as follows:

VIDEO - Waveforms 1-3
COLOR - Waveforms 4-8
VERTICAL - Waveforms 9-13
HORIZONTAL - Waveforms 14-17
CRT DRIVE - Waveforms 18-20
POWER SUPPLY - Waveforms 21-22
PIP - Waveforms 23-30

Schematic Notes

- Resistors are carbon 1/4W unless noted otherwise.
- Capacitors are ceramic 50V unless noted otherwise.
- Coil value noted is inductance in μ H.
- Test point indicated by \uparrow . Test point but no pin \square .
- Components indicated with \triangle are critical parts and replacement should be made with manufacture specified replacement parts only.
- (BOLD LINE)** indicates the route of B+ supply.
- The schematic diagrams are current at the time of printing and are subject to change without notice.
- Ground symbol \downarrow indicates **HOT GROUND CONNECTION**; \uparrow indicates **COLD GROUND**. **NOTE:** All other component symbols are used for engineering design purposes.

Voltage Measurements

- Voltage measurement:
 - AC Input to the Receiver is 120V.
 - NTSC generator is connected to the antenna of the Receiver. (Color bar pattern of 100IRE white and 7.5 IRE black.)
 - All Picture and Audio adjustments are set to Normalize.
 - TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
 - Volume - Min
 - TV/Video SW - TV position
- Audio Mode - Stereo
- Voltage readings are nominal and may vary $\pm 10\%$ on active devices. Some voltage reading will vary with signal strength and picture content.
- Supply voltages are all nominal.
- Ground symbol \downarrow indicates ground lead connection of meter. **Caution: Incorrect ground connection will result in erroneous readings.**

Tuner Voltage Chart

Enable, Data, and Clock have no DC readings. They are digital signals from the MPU.
NOTE: Voltage at the 30V test pin varies with channel selection. Refer to chart for sample tuning voltages of TV/CATV(CABLE) channels as shown.

Voltage Reading Are Nominal And May Vary $\pm 15\%$

- VHF -		- UHF -	
Ch. 02	4.0V	Ch. 14	7.7V
Ch. 06	8.2V	Ch. 69	24V
Ch. 07	7.0V		
Ch. 13	9.3V		

- CABLE -					
1st Band	2nd Band	3rd Band			
Ch. 1	6.7V	Ch. 16	4.5V	Ch. 47	3.7V
Ch. 15	24.7V	Ch. 46	2.70V	Ch. 94	14.9V
Ch. 95	9.8V			Ch. 100	15.1V
Ch. 99	17.5V			Ch. 125	24.0V

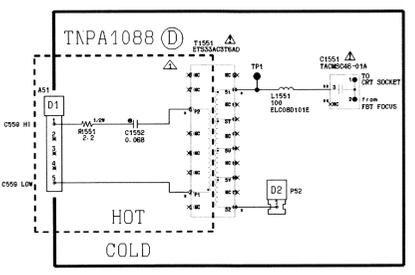
MICROPROCESSOR PROGRAMMING FOR BAND TUNING/SWITCHING

54MHz \leftarrow 130MHz \leftarrow 360MHz \leftarrow 806MHz

	FIRST TUNING BAND	SECOND TUNING BAND	THIRD TUNING BAND
VHF	02-06	07-13	
UHF			14-69
CABLE	01-06, 14, 15, 95-99	07-13, 16-46	47-94, 100-125

NOTE: CABLE channel numbers as recommended by the joint EIA/NCTA Engineering Committee and published as EIA INTERIM STANDARD NO. 6 - CABLE TELEVISION CHANNEL IDENTIFICATION PLAN - MAY 1983.

D-Board Schematic
36" Models Only



Board Index

- A-Board** - Main Chassis
- B-Board** - CRT Board
- C-Board** - H-Edge Correction, Sharpness Compensaton
- N-Board** - VIF/SIF & MTS Decoder Board
- P-Board** - Power Supply Board
- X-Board** - A/V, TV Switching, Comb Filter Board
- Y-Board** - PIP Processing

Note: Stereo Models

The Functions listed below are activated by a DC voltage change to DAC Inputs (Pin 5 and 6) of MPU IC001. Press and hold a function button on the Receiver to measure voltages.

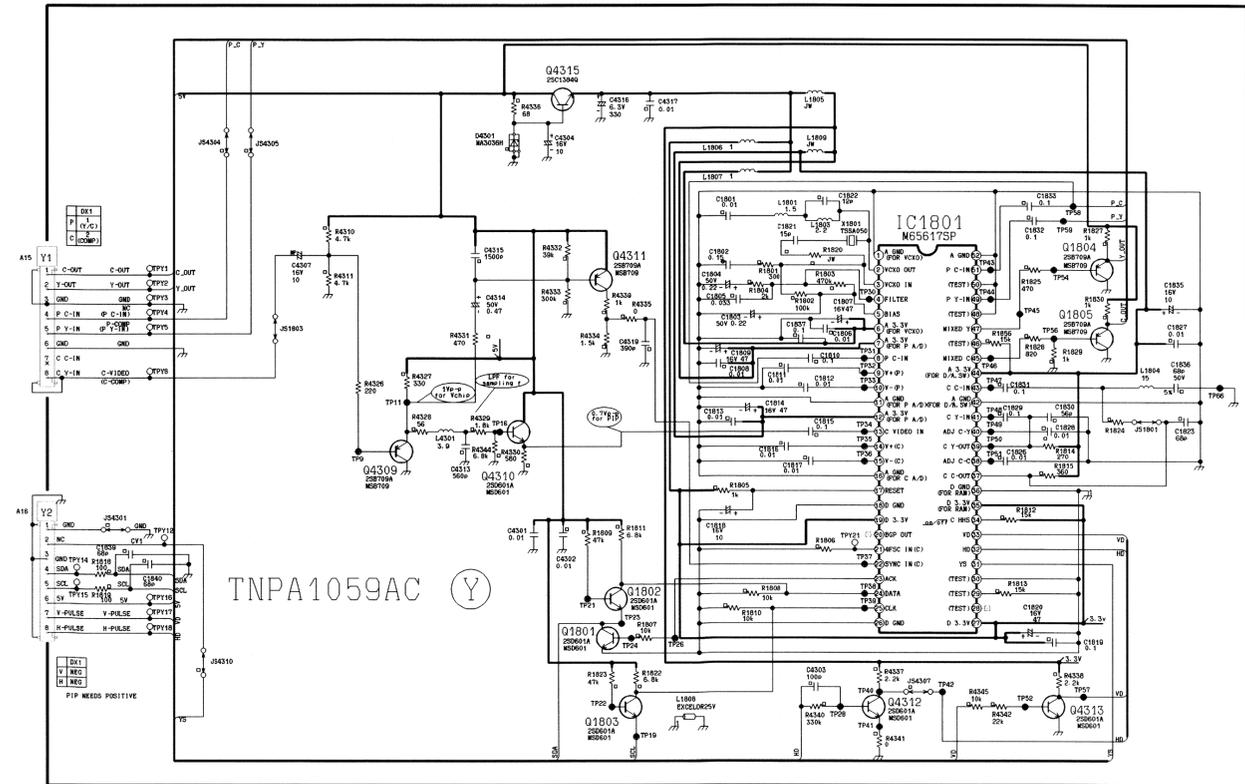
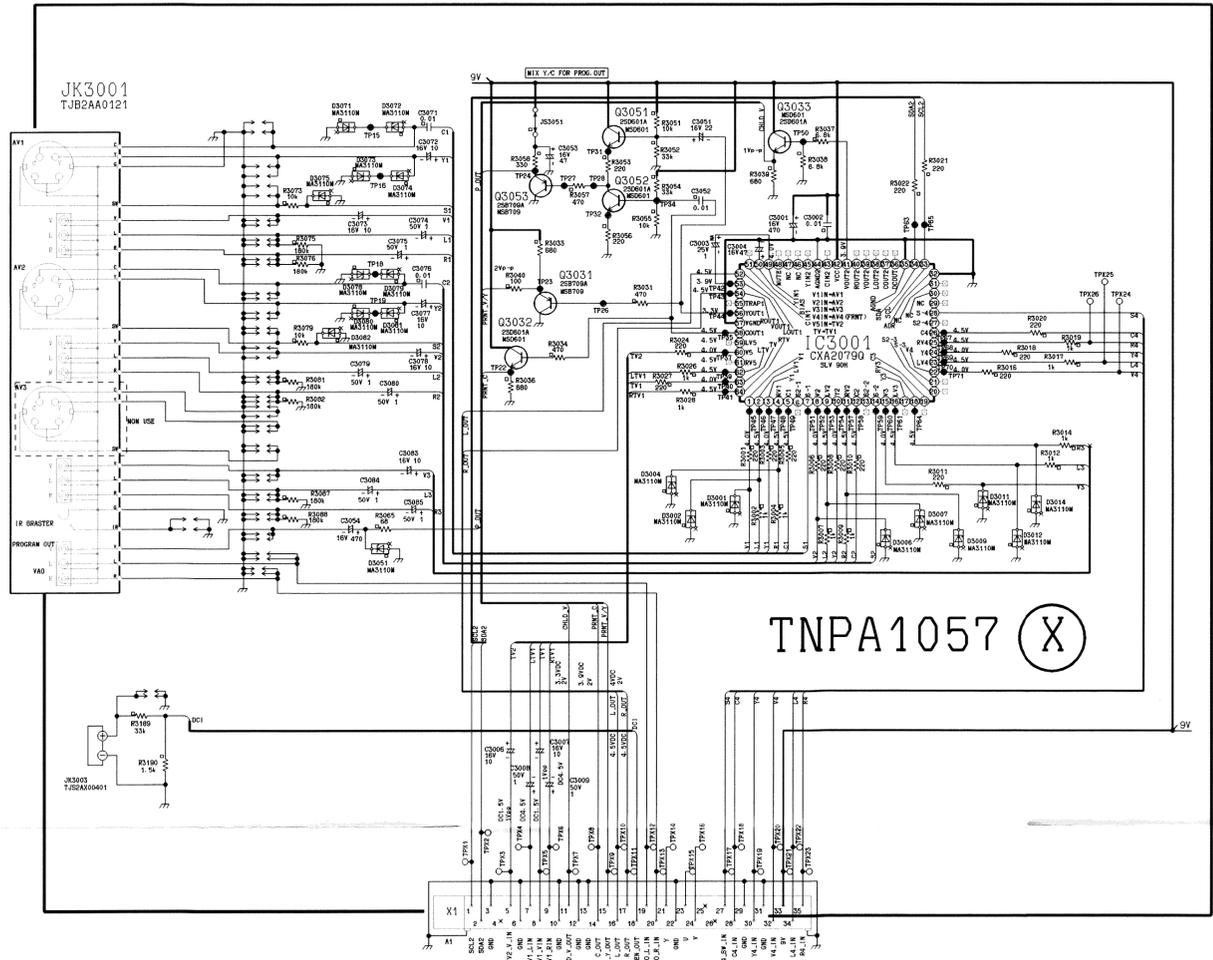
FUNCTION	PIN 5	PIN 6
POWER	0.000V-0.444V NO INPUT	NO INPUT 3.929V-4.204V 4.556V-5.000V
VOL \leftarrow	0.796V-1.071V	NO INPUT
VOL \rightarrow	1.423V-1.697V	NO INPUT
CH ∇	2.049V-2.324V	NO INPUT
CH \blacktriangle	2.676V-2.951V	NO INPUT
TV/VIDEO	3.303V-3.577V	NO INPUT
ACTION	NO INPUT	0.000V-0.444V

The AUDIO MODES being broadcast are displayed on screen in red by the voltage change to DAC input (Pin 9) of MPU IC001.

AUDIO MODE BROADCAST	PIN 9
MONO	3.774V-5.000V
SAP	2.207V-3.430V
STEREO	0.953V-1.853V
STEREO & SAP	0.000V-0.600V

X-Board Schematic CT-36SF35W, CT-36XF35CW, CT-27SF35W, & CT-27XF35CW

Y-Board Schematic ALL MODELS

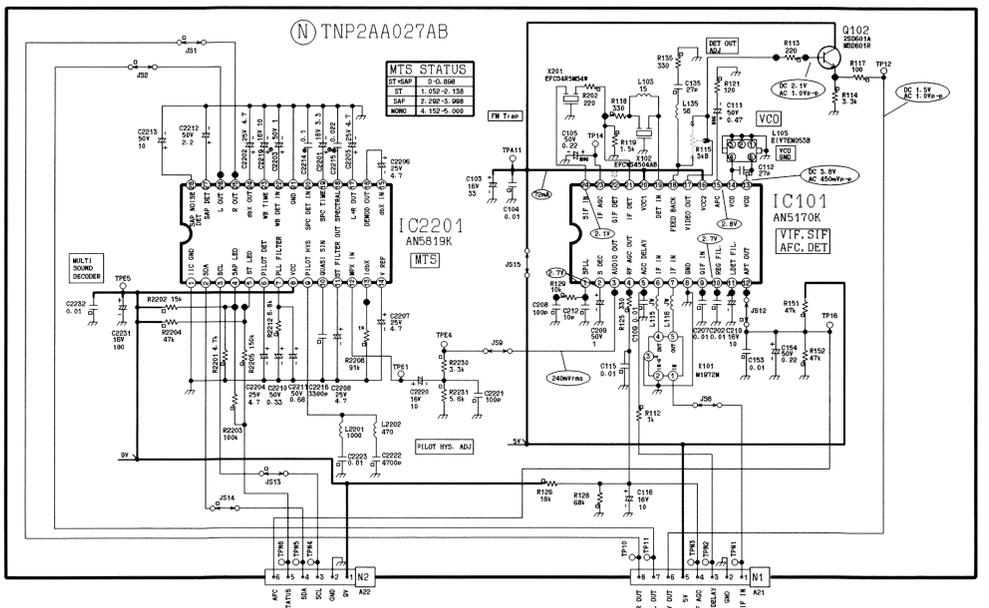


Board Index
A-Board - Main Chassis
C-Board - CRT Board
F-Board - H-Edge Correction, Sharpness Compensator
N-Board - VIF/SIF & MTS Decoder Board
P-Board - Power Supply Board
X-Board - A/V, TV Switching, Comb Filter Board
Y-Board - PIP Processing

Y-Board Voltages

IC1801		Q1801		Q1802		Q1803		Q1804	
01	0.00	0.00	3.70	3.70	3.70	0.90	0.00	0.00	0.00
02	1.40	4.10	3.20	3.10	0.00	0.00	0.00	0.00	0.00
03	1.60	0.00	4.10	4.00	1.50				
04	1.40								
05	1.60								
06	3.20								
07	3.40								
08	1.00								
09	1.40								
10	0.50								
11	0.00								
12	0.00								
13	0.80								
14	1.50								
15	0.50								
16	0.00								
17	3.20								
18	0.00								
19	3.20								
20	0.00								
21	0.00								
22	0.20								
23	0.00								
24	3.20								
25	3.10								
26	0.00								

N-Board Schematic ALL MODELS



CHIP TRANSISTOR LEAD DESIGNATION

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N-Board Voltages

IC101		IC2201	
01	2.30	01	0.00
02	2.30	02	5.00
03	2.30	03	5.00
04	3.80	04	2.10
05	2.60	05	0.00
06	2.70	06	5.00
07	2.70	07	2.70
08	2.00	08	8.80
09	2.70	09	5.00
10	1.20	10	4.40
11	2.70	11	4.40
12	2.00	12	3.20
13	3.70	13	4.40
14	3.70	14	4.40
15	3.70	15	4.40
16	3.70	16	4.40
17	3.70	17	4.40
18	3.70	18	4.40
19	3.70	19	4.40
20	3.70	20	4.40
21	3.70	21	4.40
22	3.70	22	4.40
23	3.70	23	4.40
24	3.70	24	4.40

Note: Stereo Models
 The Functions listed below are activated by a DC voltage change to DAC Inputs (Pin 5 and 6) of MPU IC001. Press and hold a function button on the Receiver to measure voltages.

FUNCTION	PIN 5	PIN 6
POWER	0.000V-0.444V	NO INPUT
VOL	0.796V-1.071V	4.556V-5.000V
CH	1.423V-1.697V	NO INPUT
CH	2.049V-2.324V	NO INPUT
TV/VIDEO	2.676V-2.951V	NO INPUT
ACTION	3.303V-3.577V	NO INPUT
STEREO & SAP	NO INPUT	0.000V-0.444V

The AUDIO MODES being broadcast are displayed on screen in red by the voltage change to DAC input (Pin 9) of MPU IC001.

AUDIO MODE BROADCAST	PIN 9
MONO	3.774V-5.000V
SAP	2.207V-3.420V
STEREO	0.953V-1.853V
STEREO & SAP	0.000V-0.600V

Tuner Voltage Chart
 Enable, Data, and Clock have no DC readings. They are digital signals from the MPU.
 NOTE: Voltage at the 30V test pin varies with channel selection. Refer to chart for sample tuning voltages of TV/CATV(CABLE) channels as shown.
 Voltage Reading Are Nominal And May Vary ± 15%

- VHF -		- UHF -	
Ch. 02	4.0V	Ch. 14	7.7V
Ch. 06	8.2V	Ch. 69	24V
Ch. 07	7.0V		
Ch. 13	9.3V		

- CABLE -		
1st Band	2nd Band	3rd Band
Ch. 1 6.7V	Ch. 16 4.5V	Ch. 47 3.7V
Ch. 15 24.7V	Ch. 46 2.70V	Ch. 94 14.9V
Ch. 95 9.8V	Ch. 100 15.1V	
Ch. 99 17.5V	Ch. 125 24.0V	

MICROPROCESSOR PROGRAMMING FOR BAND TUNING/SWITCHING

	54MHz	130MHz	360MHz	806MHz
FIRST TUNING BAND	02-06	07-13		
UHF			14-69	
CABLE	01-06, 14, 15, 95-99	07-13, 16-46	47-94, 100-125	

NOTE: CABLE channel numbers as recommended by the joint EIA/NTCA Engineering Committee and published as EIA INTERIM STANDARD NO. 6 - CABLE TELEVISION CHANNEL IDENTIFICATION PLAN - MAY 1983.

X-Board Voltages

IC3001	
01	3.80
02	4.30
03	3.80
04	4.30
05	4.30
06	0.10
07	4.70
08	3.80
09	4.30
10	3.80
11	4.30
12	4.30
13	0.10
14	4.70
15	3.80
16	4.30
17	3.90
18	4.30
19	4.30
20	0.10
21	4.70
22	3.80
23	4.30
24	3.80
25	4.30
26	4.30
27	0.10
28	4.70
29	0.00
30	0.00
31	0.00
32	0.00

B	Q3031	Q3032	Q3033
C	3.90	4.20	2.00
E	0.00	8.70	8.70
	4.60	3.50	1.40

B	Q3051	Q3052	Q3053
C	6.40	1.80	4.60
E	8.70	4.60	0.00
	5.80	1.20	5.30

1

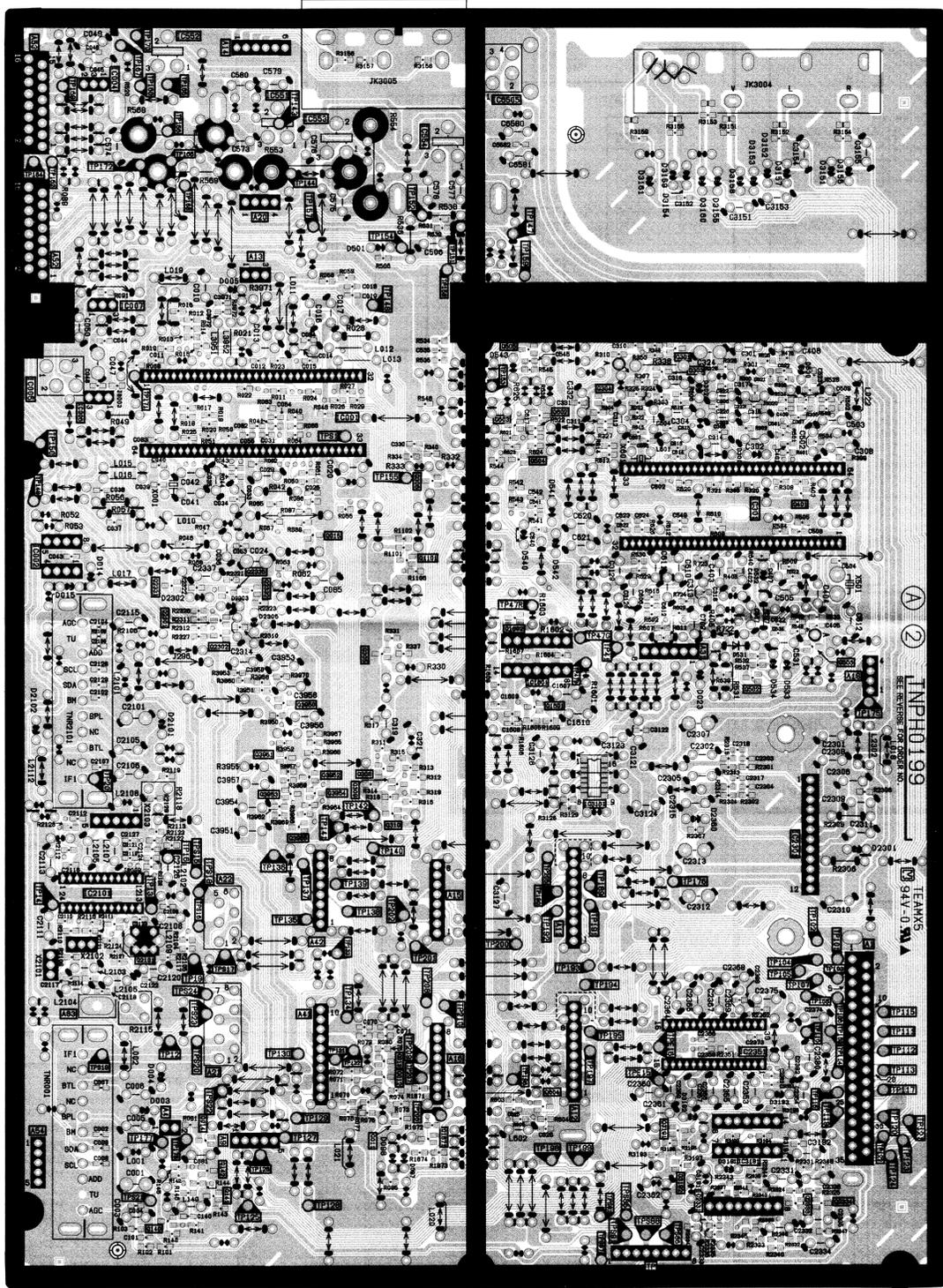
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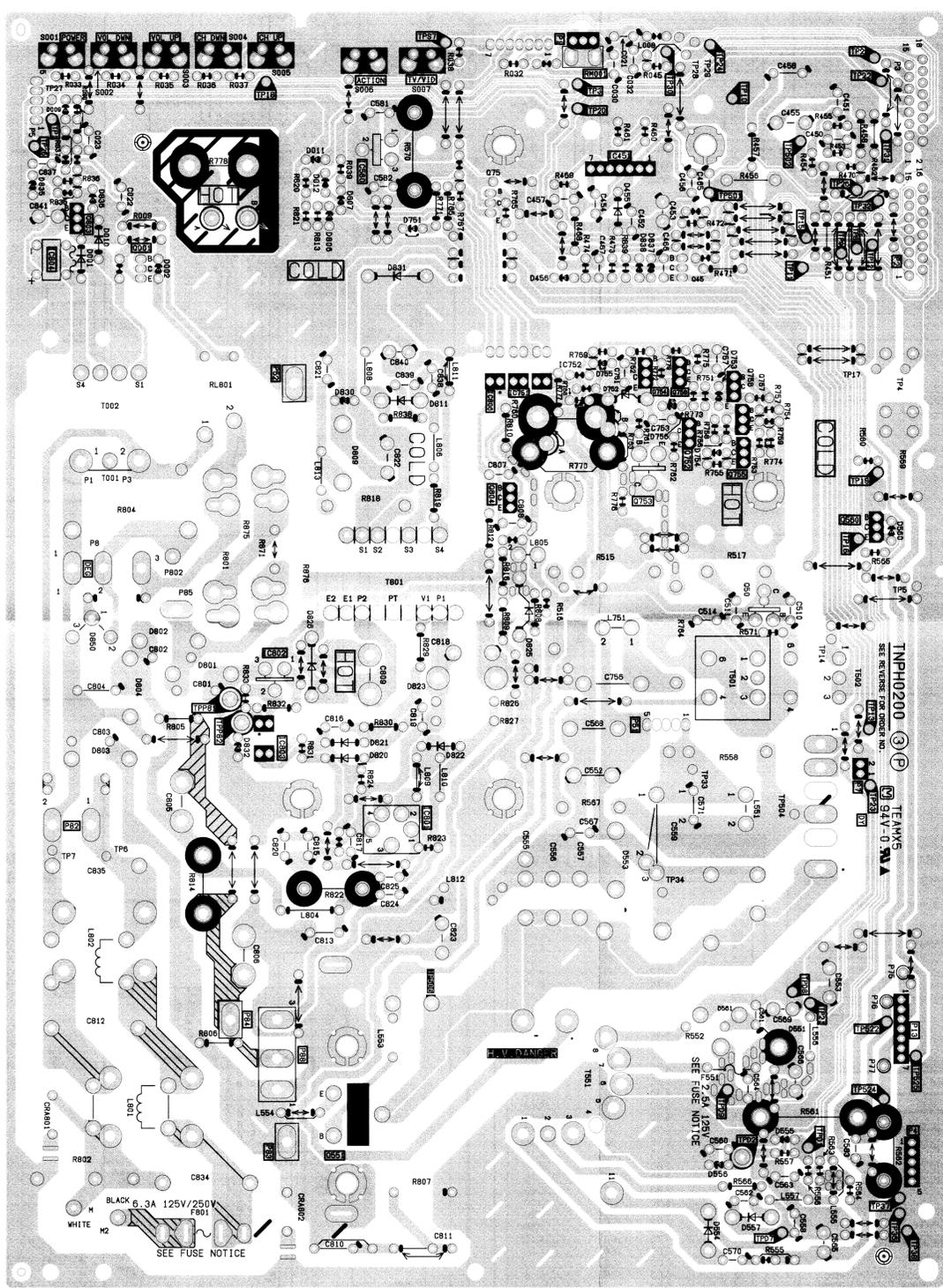
4

5

A-Board Layout



P-Board Layout



MTC9806771C1

Sheet 4 of 5
Side B

Board Layouts
ALL MODELS
CT-36SF39W, CT-36XF39CW, CT-27XF39W, CT-27XF39CW, CT-27XF29W, & CT-27XF29CW

A

B

C

D

E

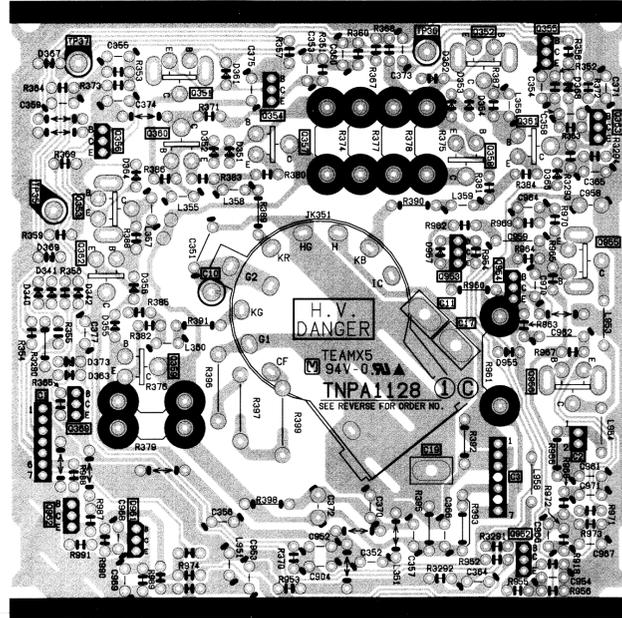
F

G

H

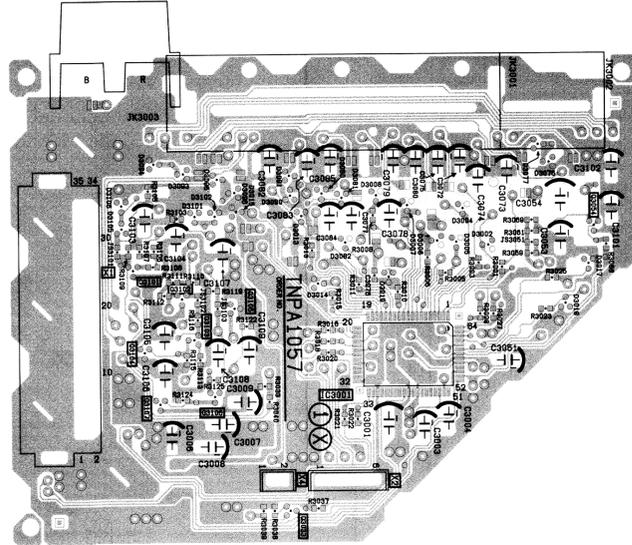
1

C-Board Layout

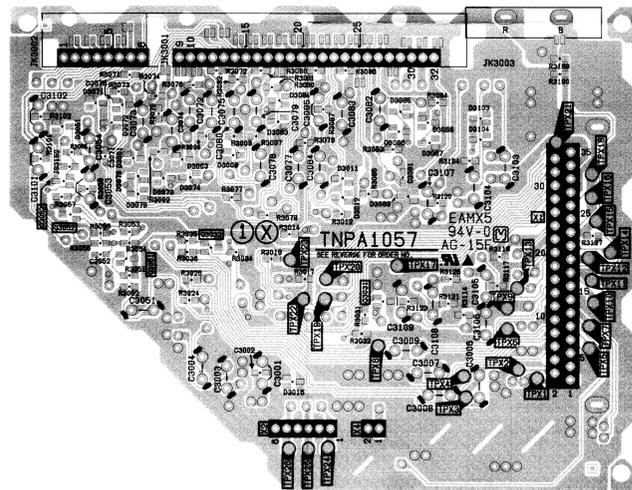


2

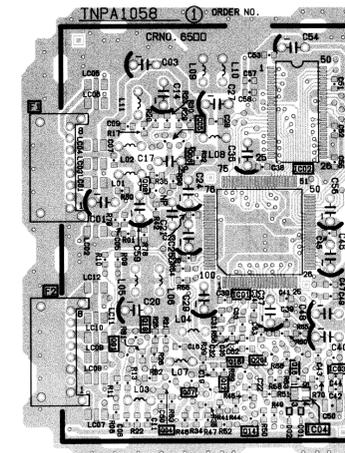
X-Board Layout (TOP)



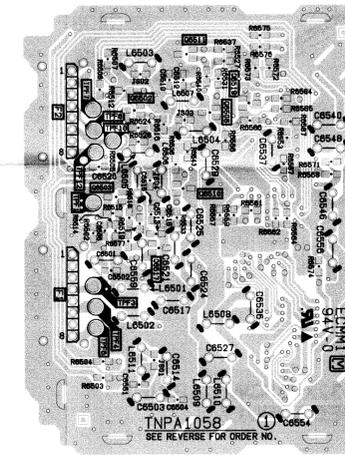
X-Board Layout (BOTTOM)



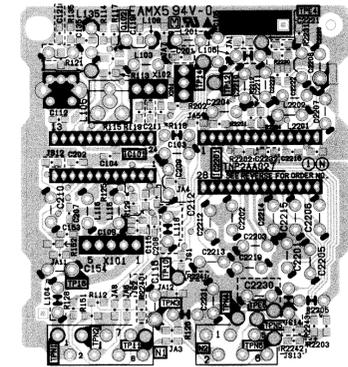
F-Board Layout (TOP)



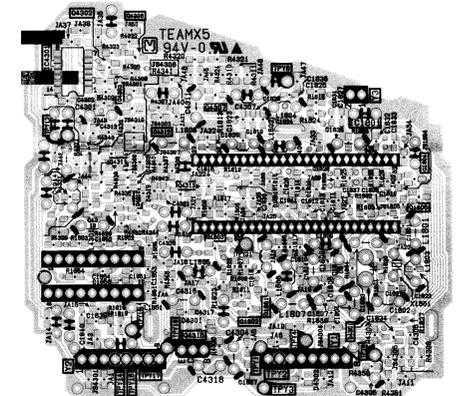
F-Board Layout (BOTTOM)



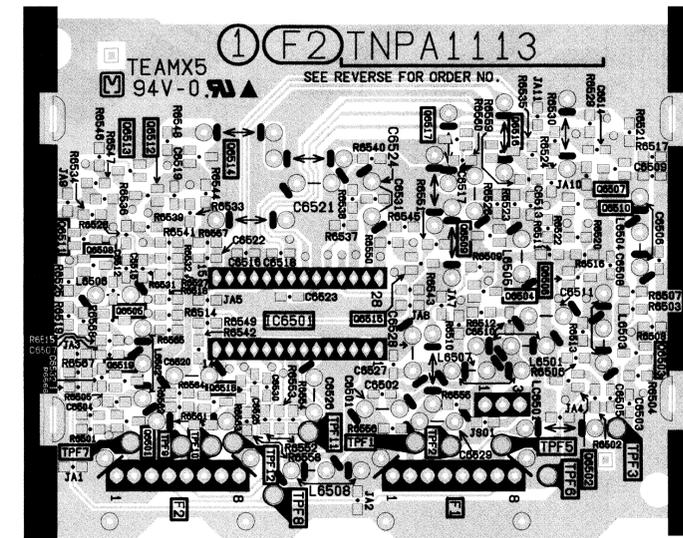
N-Board Layout



Y-Board Layout



F-Board Layout (CT-27SF25W & CT-27XF25CW only)



3

Waveform Measurements

1. indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
 2. Taken with a NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
 3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
 4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak amplitudes may vary depending on the type of Oscilloscope used and its settings.
 5. Ground symbol indicates (Hot) ground lead connection of the Oscilloscope. CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.
- The waveforms are taken in the order of circuit flow through the various sections as follows:
- VIDEO - Waveforms 1-3
 - COLOR - Waveforms 4-8
 - VERTICAL - Waveforms 9-13
 - HORIZONTAL - Waveforms 14-17
 - CRT DRIVE - Waveforms 18-20
 - POWER SUPPLY - Waveforms 21-22
 - PIP - Waveforms 23-30

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value noted is inductance in μ H.
4. Test point indicated by ∇ , Test point but no pin \square .
5. Components indicated with Δ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. (BOLD LINE) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ∇ indicates HOT GROUND CONNECTION; \square indicates COLD GROUND. NOTE: All other component symbols are used for engineering design purposes.

Voltage Measurements

1. Voltage measurement:
 - AC input to the Receiver is 120V. NTSC generator is connected to the antenna of the Receiver. (Color bar pattern of 100IRE white and 7.5 IRE black).
 - All Picture and Audio adjustments are set to Normalize.
 - TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
 - Volume - Min
 - TV/Video SW - TV position
2. Audio Mode - Stereo
- Voltage readings are nominal and may vary $\pm 10\%$ on active devices. Some voltage reading will vary with signal strength and picture content.
- Supply voltages are all nominal.
3. Ground symbol ∇ indicates ground lead connection of meter. CAUTION: Incorrect ground connection will result in erroneous readings.

Board Index

- A-Board - Main Chassis
- C-Board - CRT Board
- F-Board - H-Edge Correction, Sharpness Compensation
- N-Board - VIF/SIF & MTS Decoder Board
- P-Board - Power Supply Board
- X-Board - A/V, TV Switching, Comb Filter Board
- Y-Board - PIP Processing

